



Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide

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Customer Order Number:



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Preface

This preface describes the objectives of this document and explains how to find additional information on related products and services. It contains the following sections:

- [Document Objectives, page ix](#)
- [Audience, page ix](#)
- [Related Documentation, page ix](#)
- [Obtaining Documentation and Submitting a Service Request, page x](#)
- [Document Change History, page x](#)

Document Objectives

This guide describes the steps necessary to install and configure the Sun Solaris 10 operating system, and the Cisco PGW 2200 Softswitch software Release 9.8.



Note

This guide does not cover media gateway (MGW) or Cisco PGW 2200 Softswitch hardware installation. For instructions on installing these components, see the *Cisco PGW 2200 Softswitch Hardware Installation Guide*.

Audience

The audience for this document is network operators and administrators. This audience is assumed to have experience in telecommunications networks, protocols, and equipment, and a familiarity with data communications networks, protocols, and equipment.

Related Documentation

This document contains information that is related to Cisco PGW 2200 Softswitch software installation and configuration. For additional information on those subjects, see the documents at this URL:

http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/tsd_products_support_series_home.html

You can also find the *Cisco PGW 2200 Softswitch Documentation Map* at the following URL:

http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/products_documentation_roadmaps_list.html

Other useful reference publications include

- Overviews of the related telephony solutions—Describe the Cisco telephony solutions with which the Cisco PGW 2200 Softswitch node is associated
- Provisioning guides for the related telephony solutions—Describe the provisioning steps for the Cisco telephony solutions with which the Cisco PGW 2200 Softswitch node is associated
- Solution gateway installation and configuration guides—Describe the steps for installing and configuring the media gateway for a particular Cisco telephony solution
- *Cisco IP Transfer Point - LinkExtender*—Describes the Cisco IP Transfer Point - LinkExtender (Cisco IPT-L, formerly known as the Cisco Signaling Link Terminal or Cisco SLT) and provides configuration information

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation at

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

Document Change History

| Release Number | Document Number | Change Date | Change Summary |
|----------------|-----------------|---------------|-----------------|
| 9.8(1) | OL-18083-01 | November 2008 | Initial release |



CHAPTER 1

Preparing for Sun Solaris Operating System and Cisco PGW 2200 Softswitch Software Installation

This chapter provides checklists describing the required and optional components, software media, and information you must have on hand before installing the Sun Solaris operating system and the Cisco PGW 2200 Softswitch software:

- Cisco PGW 2200 Softswitch Release 9.8 and up, which requires the Sun Solaris Operating System 10



Note

The entire installation procedure takes approximately 2 hours to complete.

Supported Platforms and Cisco Products

The following Cisco products are supported by this software:

- Cisco PGW 2200 Softswitch
- Cisco Billing and Measurements Server (BAMS)
- Cisco H.323 Signaling Interface (HSI)

The platforms that are supported for these products are identified in the [Cisco PGW 2200 Softswitch Hardware Installation Guide \(Release 7 & 9\)](#).

Solaris 10, Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Software Release Preinstallation Checklists

[Table 1-1](#) through [Table 1-4](#) list the required and optional tasks, information, and software media for installing the Solaris 10 operating system and the Cisco PGW 2200 Softswitch software Release 9.8 and higher.

Before installing the Sun Solaris operating system, Solaris patches, and alarm card software, ensure that you collect the information and complete tasks listed in the following tables.



Note

The target machine must have a terminal connected to the console port by means of a serial cable.

Required Software Media

Gather all of the appropriate software media listed in [Table 1-1](#). For more information, see the appropriate Sun documentation that shipped with your system.

Table 1-1 Solaris 10 Required Media Checklist

| Media | Version |
|---|---------------------------|
| <p>The following CD-ROM disks are ordered from Cisco:</p> <ul style="list-style-type: none"> • Cisco Solaris 10 Operating System Jumpstart Disk <p>This disk installs the Sun Solaris 10 Operating System, configured specifically to support the Cisco PGW 2200 Softswitch software. There are two versions of this disk, one for each of the supported platform types:</p> <ul style="list-style-type: none"> – Cisco Solaris 10 Operating System Jumpstart Disk for Sparc-based platforms – Cisco Solaris 10 Operating System Jumpstart Disk for Opteron-based platforms | <p>06/06</p> <p>01/06</p> |
| <ul style="list-style-type: none"> • Cisco Solaris 10 Operating Environment CD <p>This disk contains the following packages:</p> <ul style="list-style-type: none"> – CSCOh020 (MGC Security package) – CSCOh021 (Verification Test Suite scripts) – CSCOh022 (Solaris 10 patches for Sparc-based platforms) – CSCOh023 (DiskSuite installation scripts) – CSCOh024 (Log/Spool installation for Sparc-based platforms) – CSCOh026 (Xterm, ftp, ntp, and alarm software installation for Sparc-based platforms) – CSCOh032 (Solaris 10 patches for Opteron-based platforms) – CSCOh036 (Xterm, ftp, and ntp installation for Opteron-based platforms) | <p>3.0(6)</p> |

Minimum System Requirements

Refer to the [Cisco PGW 2200 Softswitch Hardware Installation Guide \(Release 7 & 9\)](#) for the host minimum hardware requirements. Before using the minimum hardware configuration, consult your Cisco representative to determine the hardware that gives you the best performance results based on your network configuration, proposed traffic, and desired processing power.

Required Site-Specific Information

Your system site administrator can provide the required site-specific information in [Table 1-2](#). Use the Notes column in this table to record the information. Several steps in the installation procedure in [Chapter 2, “Installing the Sun Solaris 10 Operating System”](#) require you to provide this information.

Table 1-2 *Site-Specific Information*

| Required Information | Notes |
|---|-------|
| Subnet Mask (Example: 255.255.255.0) | |
| Default router (Example: 111.11.xxx.1) | |
| DNS server | |
| NTP server IP address | |
| Time zone (Example: United States (Eastern)) | |
| Root password (Assigned by your system site administrator) | |

Required Machine-Specific Information

Your system site administrator can provide the information called for in [Table 1-3](#) as it applies to your target Sun Netra machine. Use the Notes column in this table to record the information. Several steps in the installation procedure require you to provide this information.

Table 1-3 *Machine-Specific Checklist*

| Information | Notes |
|---|-------|
| Host name of target machine | |
| IP address of target machine | |
| Default router IP address | |
| Additional Ethernet IP address | |
| Subnet address for each additional Ethernet IP address | |
| Netmask address for each additional Ethernet IP address | |

Required Tasks

Before you begin installing the Solaris 10 operating system, perform the tasks listed in [Table 1-4](#).

Table 1-4 **Tasks Checklist**

| Check | Tasks |
|-------|---|
| | Make sure that the target machine is connected to a terminal by a serial cable inserted into the console port. |
| | Have your company's internal support and Cisco support contact information readily available so you can get help with the installation if needed. If you have questions or need assistance, see the “Obtaining Documentation and Submitting a Service Request” section on page x. |



CHAPTER 2

Installing the Sun Solaris 10 Operating System

This chapter provides instructions for installing the packages that create the Sun Solaris 10 operating system and its operating environment on the Sun Netra and Sun Fire platforms. The following sections contain these instructions.



Note

In the following procedures, your responses to prompts sometimes depend on the disk drive size or other particulars of your system. These are pointed out as you follow the procedures.

- [Supported Platforms, page 2-1](#)
- [Supported Disk Drives, page 2-1](#)
- [Before You Start, page 2-2](#)
- [Loading the Sun Solaris 10 Operating System, page 2-2](#)
- [Loading the Sun Solaris 10 Operating Environment, page 2-72](#)



Note

For procedures on migrating to Solaris 10 and Cisco PGW 2200 Softswitch software Release 9.8, see [Chapter 5, “Migrating to Solaris 10 and Cisco PGW 2200 Softswitch Software Release 9.8.”](#)

Supported Platforms

This document describes the specific steps necessary for installing the Sun Solaris 10 operating system and the operating environment on the Sun Netra and Sun Fire platforms. Two platform types are used: Sparc-based and Opteron-based. The platforms that are supported for these products are identified in the [Cisco PGW 2200 Softswitch Hardware Installation Guide \(Release 7 & 9\)](#).

Supported Disk Drives

The following disk drives are supported:

- 73 GB
- 146 GB

Before You Start

Be sure to read the following cautions, notes, and tips before installing the Sun Solaris 10 operating system and the operating environment.

Cautions, Notes, and Tips



Note

The procedures in this chapter require a working knowledge of the system administration procedures for the Sun Solaris (UNIX) operating system.



Note

Be sure to have the required information listed in [Chapter 1, “Preparing for Sun Solaris Operating System and Cisco PGW 2200 Softswitch Software Installation,”](#) before you begin the installation process.



Note

Allow at least 2 hours downtime for the installation of the Cisco PGW 2200 Softswitch software environment.



Note

The text in the screens displayed throughout this document might differ slightly from the text displayed on your console. The screen displays are for reference only and should be treated as examples.



Note

Most of the steps in the installation process ask you to press **F2** to continue. However, **F2** does not apply to all console types. If it does not apply on your system, you should press **Esc-2** instead.



Tip

During the installation process, monitor system output frequently for error messages and correct any error conditions before continuing with the installation.

Loading the Sun Solaris 10 Operating System

This section provides the following instructions for loading the Sun Solaris 10 operating system:

- [Devices on Supported Platforms, page 2-3](#)
- [Installing the Sun Solaris 10 Operating System for Sparc-based Platforms, page 2-3](#)
- [Installing the Sun Solaris 10 Operating System for Opteron-based Platforms, page 2-13](#)
- [Configuring Your Host, page 2-50](#)
- [Platform-Specific Installation Procedures, page 2-62](#)
- [Installing the Sparc-based Solaris 10 Patches Package \(CSCOh022\), page 2-73](#)
- [Installing the Opteron-based Solaris 10 Patches Package \(CSCOh032\), page 2-75](#)

- [Installing the Solstice DiskSuite \(CSCOh023\), page 2-77](#)
- [Installing the Log and Spool File Systems \(CSCOh024\), page 2-89](#)
- [Installing Cisco BAMS Archive Partition \(CSCOh027\), page 2-98](#)
- [Installing the Sparc-based Communications and Alarm Software Package \(CSCOh026\), page 2-103](#)
- [Installing the Opteron-based Communications Software Package \(CSCOh036\), page 2-118](#)
- [Installing the Verification Test Suite Script Package \(CSCOh021\), page 2-129](#)

Devices on Supported Platforms

Table 2-1 shows the Ethernet and disk drive device names for each platform type. This table is referenced throughout this chapter.

Table 2-1 *Device Names on Supported Host Platforms*

| Platform Type | Ethernet Interfaces | | | | Disk Drives | | | |
|---------------------------|---------------------|---------|-------------------|-------------------|-------------|--------|---------------------|---------------------|
| | First | Second | Third | Fourth | First | Second | Third | Fourth |
| Sun Fire V210 / Netra 210 | bge0 | bge1 | bge2 | bge3 | c1t0d0 | c1t1d0 | — | — |
| Netra 240 | bge0 | bge1 | bge2 ¹ | bge3 ¹ | c1t0d0 | c1t1d0 | — | — |
| Sun Fire V40z | bge0 | bge1 | ce0 | | c1t0d0 | c1t1d0 | — | — |
| Sun Fire X4600 | e1000g0 | e1000g1 | e1000g2 | e1000g3 | c3t0d0 | c3t1d0 | — | — |
| Sun Fire X4600 M2 | e1000g0 | e1000g1 | e1000g2 | e1000g3 | c3t0d0 | c3t1d0 | — | — |
| Netra 440 | ce0 | ce1 | — | — | c1t0d0 | c1t1d0 | c1t2d0 ¹ | c1t3d0 ¹ |
| Netra X4200 M2 | nge0 | nge1 | e1000g0 | e1000g1 | c3t0d0 | c3t1d0 | — | — |

1. This device is not used currently.



Note

If your platform has multiple disk drives, install the Solaris 10 Operating System on the first disk drive only.

Installing the Sun Solaris 10 Operating System for Sparc-based Platforms

The instructions in this section were written to correspond with the instructions in the Cisco Solaris 10 Operating System Jumpstart Disk for Sparc-based Platforms. Other Solaris installations are similar, with slight variations. These instructions will note the differences between the sets of installation instructions.

- Step 1** Choose one of the following options to connect the Cisco PGW 2200 Softswitch:
- Connect to the Cisco PGW 2200 Softswitch through a console port.
 - Connect a keyboard and monitor to the Cisco PGW 2200 Softswitch.
- Step 2** This step is optional—if you decide to skip this step, go to [Step 3](#).
- a. Place the system in single-user mode by shutting down the standby machine.

- b. When the machine prompts for a password, type either **^ -d** to proceed with normal startup, or the root password for system maintenance.

Step 3 Load the appropriate version of the CD-ROM labeled Cisco Solaris 10 Operating System Jumpstart Disk for Sparc-based Platforms into the CD-ROM drive.

Step 4 If the system is currently running, log in as **root**.

Step 5 Bring the system to the **ok** prompt by entering the following command:

```
# init 0
```



Note If you are prompted to select a language before booting from the CD, go to the **ok** prompt by sending a break on the console port. On Sun Sparc-based platforms, the key sequence **<cr>#.** gets you to the system controller prompt.

From the system controller prompt, use the **break -y** command to break out of the operating system and **console -f** command to return to the console display. You should see the **ok** prompt.

Step 6 Boot the system from the CD-ROM drive by entering the appropriate command:

```
ok boot cdrom - install
```

Information similar to the following is displayed:

```
ok boot cdrom - install
```

```
SC Alert: Host System has Reset
  Probing system devices
Probing memory
Probing I/O buses
```

```
Sun Fire V210, No Keyboard
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
OpenBoot 4.18.5, 2048 MB memory installed, Serial #52030991.
Ethernet address 0:3:ba:19:ee:f, Host ID: 8319ee0f.
```

```
Initializing      1MB of memory at addr      103feec000
Initializing      1MB of memory at addr      103fee0000
Initializing      1MB of memory at addr      103f002000
Initializing      1MB of memory at addr      103e002000
Initializing      1MB of memory at addr      1000000000
Initializing      1MB of memory at addr      0
```

```
Rebooting with command: boot cdrom - install
Boot device: /pci@1e,600000/ide@d/cdrom@0,0:f File and args: - install
```

```
SunOS Release 5.10 Version Generic_118833-17 64-bit
Copyright 1983-2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
Hardware watchdog enabled
Configuring devices.
Using RPC Bootparams for network configuration information.
Attempting to configure interface bge3...
Skipped interface bge3
Attempting to configure interface bge2...
Skipped interface bge2
Attempting to configure interface bge1...
Skipped interface bge1
Attempting to configure interface bge0...
```

```
Skipped interface bge0
Beginning system identification...
Searching for configuration file(s)...
Search complete.
Discovering additional network configuration...
Completing system identification...
Starting remote procedure call (RPC) services: done.
System identification complete.
Starting Solaris installation program...
Searching for JumpStart directory...
<<< using cdrom install_config >>>
Checking rules.ok file...
Using profile: any_machine
Using finish script: any_finish
Executing JumpStart preinstall phase...
Searching for SolStart directory...
Checking rules.ok file...
Using begin script: install_begin
Using finish script: patch_finish
Executing SolStart preinstall phase...
Executing begin script "install_begin"...
Begin script install_begin execution completed.
```

Processing profile

- Selecting cluster (SUNWCrnet)
- Selecting package (SUNWadmc)
- Selecting package (SUNWadmfw)
- Selecting package (SUNWcpc)
- Selecting package (SUNWcpcu)
- Selecting package (SUNWcstl)
- Selecting package (SUNWless)
- Selecting package (SUNWlur)
- Selecting package (SUNWluu)
- Selecting package (SUNWmkcd)
- Selecting package (SUNWmipu)
- Selecting package (SUNWmipr)
- Selecting package (SUNWocf)
- Selecting package (SUNWocfr)
- Selecting package (SUNWspnego)
- Selecting package (SUNWter)
- Selecting package (SUNWtnfc)
- Selecting package (SUNWucbt)
- Selecting package (SUNWvld)
- Selecting package (SUNWvldu)
- Selecting package (SUNWzsh)
- Selecting package (SUNWsacom)
- Selecting package (SUNWroute)
- Selecting package (SUNWxwfnt)
- Selecting package (SUNWxwdv)
- Selecting package (SUNWctpls)
- Selecting package (SUNWgssdh)
- Selecting package (SUNWm64cf)
- Selecting package (SUNWj5rt)
- Selecting package (SUNWxwplt)
- Selecting package (SUNWxwplr)
- Selecting package (SUNWdtcor)
- Selecting package (SUNWxwice)
- Selecting package (SUNWxwrtl)
- Selecting package (SUNWlibC)
- Selecting package (SUNWmfrun)
- Selecting package (SUNWil5rf)
- Selecting package (SUNWmdu)
- Selecting package (SUNWadmfr)

```

- Selecting package (SUNWrsg)
- Selecting package (SUNWsadmi)
- Selecting package (SUNWsasnm)
- Selecting package (SUNWmibii)
- Selecting package (SUNWxi18n)
- Selecting package (SUNWtoo)
- Selecting package (SUNWsprt)
- Selecting package (SUNWbip)
- Selecting package (SUNWbind)
- Selecting package (SUNWbindr)
- Selecting package (SUNWgzip)
- Selecting package (SUNWzip)
- Selecting package (SUNWbash)
- Selecting package (SUNWtcsh)
- Selecting package (SUNWgss)
- Selecting package (SUNWgssc)
- Selecting package (SUNWgssk)
- Selecting package (SUNWqos)
- Selecting package (SUNWqosu)
- Selecting package (SUNWmdb)
- Selecting package (SUNWmdbr)
- Selecting package (SUNWmdbdm)
- Selecting package (SUNWnfscr)
- Selecting package (SUNWnfscu)
- Selecting package (SUNWnfscu)
- Selecting package (SUNWifp)
- Selecting package (SUNWged)
- Selecting package (SUNWl394)
- Selecting package (SUNWqfed)
- Selecting package (SUNWaccr)
- Selecting package (SUNWaccu)
- Selecting package (SUNWus)
- Selecting package (SUNWrsgk)
- Selecting package (SUNWzebrar)
- Selecting package (SUNWzebrau)
- Selecting package (SUNWeurf)
- Selecting package (SUNWgcmn)
- Selecting package (SUNWeuodf)
- Selecting package (SUNWxwacx)
- Selecting package (SUNWpoolr)
- Selecting package (SUNWpool)
- Selecting package (SUNWluzone)
- Selecting package (SUNWzoner)
- Selecting package (SUNWzoneu)
- Selecting package (SUNWbtool)
- Selecting package (SUNWdtrc)
- Selecting package (SUNWdtrp)
- Selecting package (SUNWfss)
- Selecting package (SUNWinst)
- Selecting package (SUNWipc)
- Selecting package (SUNWqus)
- Selecting package (SUNWqusu)
- Selecting package (SUNWrcmdc)
- Selecting package (SUNWdtdmr)
- Selecting package (SUNWtltk)
- Selecting package (SUNWtnetc)
- Selecting package (SUNWtnfd)
- Selecting package (SUNWtnetd)
- Selecting package (SUNWtnetr)
- Selecting package (SUNWsshcu)
- Selecting package (SUNWsshdr)
- Selecting package (SUNWsshdu)
- Selecting package (SUNWssh)
- Selecting package (SUNWsshu)

```

- Selecting package (SUNWpd)
- Selecting package (SUNWced)
- Selecting package (SUNWcart200)
- Selecting package (SUNWkvmt200)
- Selecting package (SUNWust1)
- Selecting package (SUNWatfsr)
- Selecting package (SUNWatfsu)
- Selecting package (SUNWrcmdr)
- Selecting package (SUNWrcmds)
- Selecting package (SUNWxcu4)
- Selecting package (SUNWefc)
- Selecting package (SUNWglmr)
- Selecting package (SUNWi2cr)
- Selecting package (SUNWpstl)
- Selecting package (SUNWbart)
- Selecting package (SUNWpiclu)
- Selecting package (SUNWpiclr)
- Selecting package (SUNWopensslr)
- Selecting package (SUNWopenssl-commands)
- Selecting all disks
- Configuring boot device
- Using disk (c1t0d0) for "rootdisk"
- Configuring / (c1t0d0s0)
- Configuring /var (c1t0d0s1)
- Configuring swap (c1t0d0s3)
- Configuring (c1t0d0s4)
- Configuring (c1t0d0s6)
- Configuring /opt (c1t0d0s5)
- Deselecting unmodified disk (c1t1d0)

Verifying disk configuration

- WARNING: Changing the system's default boot device in the EEPROM

Verifying space allocation

- Total software size: 376.86 Mbytes

Preparing system for Solaris install

Configuring disk (c1t0d0)

- Creating Solaris disk label (VTOC)

Creating and checking UFS file systems

- Creating / (c1t0d0s0)
- Creating /var (c1t0d0s1)
- Creating /opt (c1t0d0s5)

Beginning Solaris software installation

Starting software installation

| | |
|----------------------|--------------------------|
| SUNWcsu.....done. | 363.07 Mbytes remaining. |
| SUNWcsr.....done. | 359.22 Mbytes remaining. |
| SUNWcsl.....done. | 347.35 Mbytes remaining. |
| SUNWcnetr.....done. | 347.23 Mbytes remaining. |
| SUNWckr.....done. | 337.09 Mbytes remaining. |
| SUNWkvm.u.....done. | 335.16 Mbytes remaining. |
| SUNWcar.u.....done. | 334.65 Mbytes remaining. |
| SUNWcakr.u.....done. | 315.55 Mbytes remaining. |
| SUNWxwice.....done. | 315.27 Mbytes remaining. |
| SUNWcsd.....done. | 315.01 Mbytes remaining. |
| SUNWxwrtl.....done. | 314.87 Mbytes remaining. |
| SUNWzlib.....done. | 314.62 Mbytes remaining. |
| SUNWbzip.....done. | 314.36 Mbytes remaining. |
| SUNWlibmsr.....done. | 311.13 Mbytes remaining. |

| | | | | |
|-----------------------------------|-------|--------|--------|------------|
| SUNWlibms..... | done. | 311.09 | Mbytes | remaining. |
| SUNWxwfont..... | done. | 299.39 | Mbytes | remaining. |
| SUNWxwdrv..... | done. | 299.34 | Mbytes | remaining. |
| SUNWxwplr..... | done. | 299.28 | Mbytes | remaining. |
| SUNWperl584core..... | done. | 293.83 | Mbytes | remaining. |
| SUNWperl584usr..... | done. | 272.69 | Mbytes | remaining. |
| SUNWesu..... | done. | 270.73 | Mbytes | remaining. |
| SUNWcpp..... | done. | 270.63 | Mbytes | remaining. |
| SUNWdtcor..... | done. | 270.60 | Mbytes | remaining. |
| SUNWxwplt..... | done. | 249.87 | Mbytes | remaining. |
| SUNWlibC..... | done. | 244.13 | Mbytes | remaining. |
| SUNWctpls..... | done. | 244.05 | Mbytes | remaining. |
| SUNWmfrun..... | done. | 234.11 | Mbytes | remaining. |
| SUNWtcsh..... | done. | 233.72 | Mbytes | remaining. |
| SUNWtecla..... | done. | 233.09 | Mbytes | remaining. |
| SUNWter..... | done. | 231.47 | Mbytes | remaining. |
| SUNWgcmn..... | done. | 231.44 | Mbytes | remaining. |
| SUNWpr..... | done. | 230.35 | Mbytes | remaining. |
| SUNWtls..... | done. | 222.76 | Mbytes | remaining. |
| SUNWtdmr..... | done. | 222.73 | Mbytes | remaining. |
| SUNWtltk..... | done. | 219.66 | Mbytes | remaining. |
| SUNWkrbr..... | done. | 219.58 | Mbytes | remaining. |
| SUNWkrbu..... | done. | 217.09 | Mbytes | remaining. |
| SUNWtnetc..... | done. | 216.92 | Mbytes | remaining. |
| SUNWtnetd..... | done. | 216.84 | Mbytes | remaining. |
| SUNWtnetr..... | done. | 216.79 | Mbytes | remaining. |
| SUNWtnfc..... | done. | 216.29 | Mbytes | remaining. |
| SUNWtnfd..... | done. | 216.20 | Mbytes | remaining. |
| SUNWtoo..... | done. | 215.12 | Mbytes | remaining. |
| SUNWucbt..... | done. | 215.09 | Mbytes | remaining. |
| SUNWudaplr..... | done. | 215.06 | Mbytes | remaining. |
| SUNWudaplu..... | done. | 214.81 | Mbytes | remaining. |
| SUNWib..... | done. | 213.14 | Mbytes | remaining. |
| SUNWipoib..... | done. | 213.00 | Mbytes | remaining. |
| SUNWtavor..... | done. | 212.20 | Mbytes | remaining. |
| SUNWudapltu..... | done. | 211.75 | Mbytes | remaining. |
| SUNWudapltr..... | done. | 211.50 | Mbytes | remaining. |
| SUNWaudd..... | done. | 210.84 | Mbytes | remaining. |
| SUNWusb..... | done. | 209.47 | Mbytes | remaining. |
| SUNWusbs..... | done. | 209.39 | Mbytes | remaining. |
| SUNWuedg..... | done. | 209.21 | Mbytes | remaining. |
| SUNWugen..... | done. | 209.15 | Mbytes | remaining. |
| SUNWuksp..... | done. | 209.07 | Mbytes | remaining. |
| SUNWopenssl-libraries..... | done. | 202.10 | Mbytes | remaining. |
| SUNWwbsup..... | done. | 201.74 | Mbytes | remaining. |
| SUNWinstall-patch-utils-root..... | done. | 201.71 | Mbytes | remaining. |
| SUNWswmt..... | done. | 201.00 | Mbytes | remaining. |
| SUNWuprl..... | done. | 200.94 | Mbytes | remaining. |
| SUNWj5rt..... | done. | 118.41 | Mbytes | remaining. |
| SUNWocfr..... | done. | 118.34 | Mbytes | remaining. |
| SUNWocf..... | done. | 117.76 | Mbytes | remaining. |
| SUNWxi18n..... | done. | 116.78 | Mbytes | remaining. |
| SUNWvld..... | done. | 116.73 | Mbytes | remaining. |
| SUNWvldu..... | done. | 116.68 | Mbytes | remaining. |
| SUNWnfscr..... | done. | 116.53 | Mbytes | remaining. |
| SUNWnfscr..... | done. | 115.12 | Mbytes | remaining. |
| SUNWnfscu..... | done. | 114.83 | Mbytes | remaining. |
| SUNWgzip..... | done. | 114.73 | Mbytes | remaining. |
| SUNWgssc..... | done. | 114.68 | Mbytes | remaining. |
| SUNWgss..... | done. | 114.31 | Mbytes | remaining. |
| SUNWbip..... | done. | 114.12 | Mbytes | remaining. |
| SUNWrcmdc..... | done. | 113.25 | Mbytes | remaining. |
| SUNWrcmds..... | done. | 112.95 | Mbytes | remaining. |
| SUNWproduct-registry-root..... | done. | 112.93 | Mbytes | remaining. |

| | | | | |
|-----------------------|-------|--------|--------|------------|
| SUNWwsr2..... | done. | 112.59 | Mbytes | remaining. |
| SUNWlxml..... | done. | 109.19 | Mbytes | remaining. |
| SUNWlexpt..... | done. | 108.61 | Mbytes | remaining. |
| SUNWxge..... | done. | 108.08 | Mbytes | remaining. |
| SUNWxcu4..... | done. | 106.87 | Mbytes | remaining. |
| SUNWxwacx..... | done. | 106.69 | Mbytes | remaining. |
| SUNWsprot..... | done. | 105.21 | Mbytes | remaining. |
| SUNWzfskr..... | done. | 104.39 | Mbytes | remaining. |
| SUNWzfsr..... | done. | 103.43 | Mbytes | remaining. |
| SUNWsmapi..... | done. | 102.80 | Mbytes | remaining. |
| SUNWzfsu..... | done. | 101.29 | Mbytes | remaining. |
| SUNWrsgr..... | done. | 101.16 | Mbytes | remaining. |
| SUNWgssdh..... | done. | 100.84 | Mbytes | remaining. |
| SUNWgssk..... | done. | 100.60 | Mbytes | remaining. |
| SUNWeurf..... | done. | 96.30 | Mbytes | remaining. |
| SUNWi15rf..... | done. | 96.16 | Mbytes | remaining. |
| SUNWnistr..... | done. | 96.02 | Mbytes | remaining. |
| SUNWnisu..... | done. | 93.70 | Mbytes | remaining. |
| SUNWzebrar..... | done. | 93.63 | Mbytes | remaining. |
| SUNWzebrau..... | done. | 91.44 | Mbytes | remaining. |
| SUNWcpcu..... | done. | 90.90 | Mbytes | remaining. |
| SUNWfmdr..... | done. | 90.84 | Mbytes | remaining. |
| SUNWfmd..... | done. | 86.92 | Mbytes | remaining. |
| SUNWcslr..... | done. | 72.42 | Mbytes | remaining. |
| SUNWidnl..... | done. | 71.86 | Mbytes | remaining. |
| SUNWmdb..... | done. | 66.94 | Mbytes | remaining. |
| SUNWzip..... | done. | 66.75 | Mbytes | remaining. |
| SUNWmdbr..... | done. | 63.97 | Mbytes | remaining. |
| SUNWpiclu..... | done. | 60.17 | Mbytes | remaining. |
| SUNWzoner..... | done. | 60.11 | Mbytes | remaining. |
| SUNWmdr..... | done. | 57.74 | Mbytes | remaining. |
| SUNWmdu..... | done. | 57.04 | Mbytes | remaining. |
| SUNWadmc..... | done. | 55.16 | Mbytes | remaining. |
| SUNWadmfr..... | done. | 55.14 | Mbytes | remaining. |
| SUNWadmfw..... | done. | 54.43 | Mbytes | remaining. |
| SUNWadmlib-sysid..... | done. | 54.17 | Mbytes | remaining. |
| SUNWadmr..... | done. | 54.09 | Mbytes | remaining. |
| SUNWadmap..... | done. | 53.21 | Mbytes | remaining. |
| SUNWlur..... | done. | 51.67 | Mbytes | remaining. |
| SUNWluu..... | done. | 50.48 | Mbytes | remaining. |
| SUNWluzone..... | done. | 50.11 | Mbytes | remaining. |
| SUNWpoolr..... | done. | 50.08 | Mbytes | remaining. |
| SUNWpool..... | done. | 49.24 | Mbytes | remaining. |
| SUNWzoneu..... | done. | 48.61 | Mbytes | remaining. |
| SUNWluxop..... | done. | 47.86 | Mbytes | remaining. |
| SUNWses..... | done. | 47.76 | Mbytes | remaining. |
| SUNWssad..... | done. | 47.45 | Mbytes | remaining. |
| SUNWifp..... | done. | 47.17 | Mbytes | remaining. |
| SUNWzsh..... | done. | 44.04 | Mbytes | remaining. |
| SUNW1394..... | done. | 43.27 | Mbytes | remaining. |
| SUNWinst..... | done. | 42.77 | Mbytes | remaining. |
| SUNWintgige..... | done. | 42.51 | Mbytes | remaining. |
| SUNWipc..... | done. | 42.45 | Mbytes | remaining. |
| SUNWipfr..... | done. | 42.31 | Mbytes | remaining. |
| SUNWipfu..... | done. | 41.04 | Mbytes | remaining. |
| SUNWipged..... | done. | 40.54 | Mbytes | remaining. |
| SUNWced.u..... | done. | 39.90 | Mbytes | remaining. |
| SUNWcpc.u..... | done. | 39.84 | Mbytes | remaining. |
| SUNWbash..... | done. | 39.11 | Mbytes | remaining. |
| SUNWaccr..... | done. | 39.01 | Mbytes | remaining. |
| SUNWaccu..... | done. | 38.64 | Mbytes | remaining. |
| SUNWefc.u..... | done. | 38.36 | Mbytes | remaining. |
| SUNWiscsir..... | done. | 37.68 | Mbytes | remaining. |
| SUNWiscsiu..... | done. | 37.12 | Mbytes | remaining. |

| | |
|--------------------------------|-------------------------|
| SUNWglmr.u.....done. | 37.04 Mbytes remaining. |
| SUNWi2cr.u.....done. | 36.85 Mbytes remaining. |
| SUNWloc.....done. | 36.34 Mbytes remaining. |
| SUNWpstl.u.....done. | 36.21 Mbytes remaining. |
| SUNWus.u.....done. | 36.16 Mbytes remaining. |
| SUNWbtool.....done. | 34.83 Mbytes remaining. |
| SUNWjfca.....done. | 33.98 Mbytes remaining. |
| SUNWjfcu.....done. | 33.90 Mbytes remaining. |
| SUNWjss.....done. | 29.54 Mbytes remaining. |
| SUNWkey.....done. | 29.16 Mbytes remaining. |
| SUNWatfsr.....done. | 29.09 Mbytes remaining. |
| SUNWatfsu.....done. | 28.81 Mbytes remaining. |
| SUNWbart.....done. | 28.76 Mbytes remaining. |
| SUNWbindr.....done. | 28.71 Mbytes remaining. |
| SUNWbind.....done. | 25.60 Mbytes remaining. |
| SUNWless.....done. | 25.44 Mbytes remaining. |
| SUNWcfcl.....done. | 25.30 Mbytes remaining. |
| SUNWcfclr.....done. | 25.28 Mbytes remaining. |
| SUNWcfpl.....done. | 24.92 Mbytes remaining. |
| SUNWcfplr.....done. | 24.87 Mbytes remaining. |
| SUNWlibsasl.....done. | 24.28 Mbytes remaining. |
| SUNWchxge.....done. | 24.04 Mbytes remaining. |
| SUNWlldap.....done. | 23.84 Mbytes remaining. |
| SUNWluxopr.....done. | 23.17 Mbytes remaining. |
| SUNWm64cf.....done. | 23.11 Mbytes remaining. |
| SUNWcstl.....done. | 22.96 Mbytes remaining. |
| SUNWmdbdm.....done. | 22.90 Mbytes remaining. |
| SUNWmibii.....done. | 22.78 Mbytes remaining. |
| SUNWsasnm.....done. | 21.91 Mbytes remaining. |
| SUNWsadmi.....done. | 20.91 Mbytes remaining. |
| SUNWsaom.....done. | 20.61 Mbytes remaining. |
| SUNWmipr.....done. | 20.53 Mbytes remaining. |
| SUNWmipu.....done. | 20.25 Mbytes remaining. |
| SUNWmkcd.....done. | 18.95 Mbytes remaining. |
| SUNWdtrc.....done. | 16.86 Mbytes remaining. |
| SUNWdtrp.....done. | 16.41 Mbytes remaining. |
| SUNWfctl.....done. | 15.97 Mbytes remaining. |
| SUNWemlxs.....done. | 13.19 Mbytes remaining. |
| SUNWemlxu.....done. | 12.50 Mbytes remaining. |
| SUNWerid.....done. | 12.35 Mbytes remaining. |
| SUNWuodf.....done. | 12.23 Mbytes remaining. |
| SUNWfchbar.....done. | 12.20 Mbytes remaining. |
| SUNWfchba.....done. | 10.63 Mbytes remaining. |
| SUNWfcip.....done. | 10.44 Mbytes remaining. |
| SUNWfcmdb.....done. | 10.24 Mbytes remaining. |
| SUNWfcp.....done. | 9.95 Mbytes remaining. |
| SUNWfcprt.....done. | 9.88 Mbytes remaining. |
| SUNWfcsm.....done. | 9.73 Mbytes remaining. |
| SUNWopenssl-commands.....done. | 9.35 Mbytes remaining. |
| SUNWopensslr.....done. | 9.30 Mbytes remaining. |
| SUNWpd.....done. | 8.64 Mbytes remaining. |
| SUNWfss.....done. | 8.53 Mbytes remaining. |
| SUNWpiclr.....done. | 8.50 Mbytes remaining. |
| SUNWpkgcmdsdr.....done. | 8.46 Mbytes remaining. |
| SUNWpkgcmdsdu.....done. | 5.72 Mbytes remaining. |
| SUNWged.....done. | 5.47 Mbytes remaining. |
| SUNWqfed.....done. | 5.25 Mbytes remaining. |
| SUNWqlc.....done. | 4.05 Mbytes remaining. |
| SUNWqlcu.....done. | 4.00 Mbytes remaining. |
| SUNWqos.....done. | 3.83 Mbytes remaining. |
| SUNWqosu.....done. | 3.71 Mbytes remaining. |
| SUNWqus.....done. | 3.48 Mbytes remaining. |
| SUNWqusu.....done. | 3.45 Mbytes remaining. |
| SUNWrcmdr.....done. | 3.37 Mbytes remaining. |


```

SUNWrge.....done.      3.26 Mbytes remaining.
SUNWroute.....done.      2.94 Mbytes remaining.
SUNWrpcib.....done.      2.79 Mbytes remaining.
SUNWrsgk.....done.      2.72 Mbytes remaining.
SUNWsolnm.....done.      2.70 Mbytes remaining.
SUNWsshcu.....done.      2.27 Mbytes remaining.
SUNWsshdr.....done.      2.20 Mbytes remaining.
SUNWsshdu.....done.      1.79 Mbytes remaining.
SUNWspnego.....done.      1.68 Mbytes remaining.
SUNWsshr.....done.      1.57 Mbytes remaining.
SUNWsshu.....done.      1.00 Mbytes remaining.

```

Completed software installation

Solaris 10 software installation succeeded

Customizing system files

- Mount points table (/etc/vfstab)
- Unselected disk mount points (/var/sadm/system/data/vfstab.unselected)
- Network host addresses (/etc/hosts)
- Network host addresses (/etc/hosts)
- Environment variables (/etc/default/init)

Cleaning devices

Customizing system devices

- Physical devices (/devices)
- Logical devices (/dev)

Installing boot information

- Installing boot blocks (clt0d0s0)
- Updating system firmware for automatic rebooting

Installation log location

- /a/var/sadm/system/logs/install_log (before reboot)
- /var/sadm/system/logs/install_log (after reboot)

Installation complete

Executing SolStart postinstall phase...

Executing finish script "patch_finish"...

Finish script patch_finish execution completed.

Executing JumpStart postinstall phase...

Executing finish script "any_finish"...

any_finish started with SI_CONFIG_DIR = /tmp/install_config

any_finish completed

Finish script any_finish execution completed.

The begin script log 'begin.log'

is located in /var/sadm/system/logs after reboot.

The finish script log 'finish.log'

is located in /var/sadm/system/logs after reboot.

syncing file systems... done

rebooting...

SC Alert: Host System has Reset

Probing system devices

Probing memory

Probing I/O buses

```

Sun Fire V210, No Keyboard
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
OpenBoot 4.18.5, 2048 MB memory installed, Serial #52030991.
Ethernet address 0:3:ba:19:ee:f, Host ID: 8319ee0f.

Initializing      1MB of memory at addr      103feec000
Initializing      1MB of memory at addr      103fee0000
Initializing     15MB of memory at addr      103f002000
Initializing     16MB of memory at addr      103e002000
Initializing     992MB of memory at addr      1000000000
Initializing    1024MB of memory at addr      0

Rebooting with command: boot
Boot device: /pci@1c,600000/scsi@2/disk@0,0:a File and args:

SunOS Release 5.10 Version Generic_118833-17 64-bit
Copyright 1983-2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

Hardware watchdog enabled
Hostname: vtghost
Configuring devices.
Loading smf(5) service descriptions: 1/85
2/85
3/85
...

84/85
85/85
checking ufs filesystems
/dev/rdisk/c1t0d0s5: is logging.
Creating new rsa public/private host key pair
Creating new dsa public/private host key pair

This system is configured with NFS version 4, which uses a domain
name that is automatically derived from the system's name services.
The derived domain name is sufficient for most configurations. In a
few cases, mounts that cross different domains might cause files to
be owned by "nobody" due to the lack of a common domain name.

Do you need to override the system's default NFS version 4 domain
name (yes/no) ? [no] :
```

Step 7 Enter **no** to continue the reconfiguration process and press **Enter**.

The system displays information similar to the following:

```

For more information about how the NFS version 4 default domain
name is derived and its impact, refer to the man pages for nfs(4)
and nfsmapid(1m), and the System Administration Guide: Network
Services.
```

```
vtghost console login:
```

This completes the installation of the Sun Solaris 10 operating system. Proceed to the [“Configuring Your Host” section on page 2-50](#).

Installing the Sun Solaris 10 Operating System for Opteron-based Platforms

The instructions in this section were written to correspond with the instructions in the Cisco Solaris 10 Operating System Startup Disk for Opteron-based Platforms. Other Solaris installations are similar, with slight variations. These instructions will note the differences between the sets of installation instructions.

Step 1 Choose one of the following options to connect the Cisco PGW 2200 Softswitch:

- Connect to the Cisco PGW 2200 Softswitch through a console port.
- Connect a keyboard and monitor to the Cisco PGW 2200 Softswitch.



Note

Cisco recommends that you connect to the Cisco PGW 2200 Softswitch using a keyboard and monitor. If you choose to connect through the console port, you need to ensure that Console Redirection is enabled as instructed in [Step 6](#).

Step 2 Follow these steps to connect to the target system through a serial port:

- a. Log in to the SP (Service Processor) as an Administrator:

```
login: root
password: changeme
```

- b. Type the following command to start the ILOM Service Processor (SP) GUI:

```
start /SP/console
```

Step 3 This step is optional—if you decide to skip this, go to [Step 4](#).

- a. Place the system in single-user mode by shutting down the standby machine.
- b. When the machine prompts for a password, type either **^ -d** to proceed with normal startup, or the root password for system maintenance.

Step 4 Load the appropriate version of the CD-ROM labeled Cisco Solaris 10 Operating Software Startup Disk for Opteron-based Platforms into the CD-ROM drive.

Step 5 If the system is currently running, log in as **root**.

Step 6 Boot the system from the CD-ROM drive by entering the appropriate command:

```
# reboot
```



Note

You may be prompted during the reboot to enter **Ctrl-B** or **Ctrl-C** to open configuration tools for your hardware. You do not need to open any of these tools to complete this installation.

Perform the following steps once the reboot starts:

- a. Press the **F2** key to open the Setup menu. The Setup menu opens after the self-tests have been completed.
- b. Go to the BOOT setup information.
- c. Ensure that the CD-ROM is the first bootable device in the list.
- d. Choose the Advanced menu from the category selections at the top of the screen.
- e. If you connected to the Cisco PGW 2200 Softswitch using the console port, ensure Console Redirection is set to **enable** or **always**.

- f. Save your changes and exit the Setup menu.

Information similar to the following is displayed:

```
SSC Alert: Host System has Reset
```

```
screen not found.
```

```
keyboard not found.
```

```
Keyboard not present. Using ttys for input and output.
```



Caution

Ensure that the selected display device is set to the corresponding console device. If you use a monitor, choose **solaris**. If you use serial console, select **solaris ttys**.

```
SunFire V40z, No Keyboard
```

```
Copyright 1998-2004 Sun Microsystems, Inc. All rights reserved.
```

```
OpenBoot 4.13.0, 8192 MB memory installed, Serial #58524225.
```

```
Ethernet address 0:3:ba:7d:2:41, Host ID: 837d0241.
```

```
Rebooting with command: boot cdrom - install
```

```
Boot device: /pci@1e,600000/ide@d/cdrom@0,0:f File and args: - install
```

```
SunOS Release 5.10 Version Generic 64-bit
```

```
Copyright 1983-2005 Sun Microsystems, Inc. All rights reserved.
```

```
Use is subject to license terms.
```

```
Hardware watchdog enabled
```

```
Configuring devices.
```

```
Using RPC Bootparams for network configuration information.
```

```
Attempting to configure interface ce2...
```

```
Skipped interface ce2
```

```
Attempting to configure interface ce1...
```

```
Skipped interface ce1
```

```
Attempting to configure interface ce0...
```

```
Skipped interface ce0
```

```
Beginning system identification...
```

```
Searching for configuration file(s)...
```

```
Search complete.
```

```
Discovering additional network configuration...
```

```
Completing system identification...
```

```
Starting remote procedure call (RPC) services: done.
```

```
System identification complete.
```

```
Starting Solaris installation program...
```

```
Searching for JumpStart directory...
```

```
<<< using cdrom install_config >>>
```

```
not found
```

```
Checking rules.ok file...
```

```
Using profile: any_machine
```

```
Using finish script: any_finish
```

```
Executing JumpStart preinstall phase...
```

```
Searching for SolStart directory...
```

```
Checking rules.ok file...
```

```
Executing profile begin script...
```

```
Completed profile begin script.
```

```
Processing profile
```

- Selecting cluster (SUNWCreq)
- Deselecting cluster (SUNWCudf)
- Deselecting cluster (SUNWCbs)
- Deselecting cluster (SUNWCnfss)
- Deselecting cluster (SUNWCsndm)
- Deselecting cluster (SUNWCpcmc)
- Deselecting cluster (SUNWCpicl)
- Selecting cluster (SUNWCacc)

```
- Selecting cluster (SUNWCssh)
- Selecting cluster (SUNWCpool)
- Selecting cluster (SUNWCvld)
- Selecting cluster (SUNWCfwshl)
- Selecting cluster (SUNWClu)
- Selecting cluster (SUNWCcpc)
- Selecting cluster (SUNWCsea)
- Selecting cluster (SUNWCstl)
- Selecting cluster (SUNWCmip)
- Selecting cluster (SUNWCqos)
- Selecting cluster (SUNWCzone)
- Selecting cluster (SUNWCzebra)
- Deselecting package (SUNWauda)
- Deselecting package (SUNWad810)
- Deselecting package (SUNWvia823x)
- Deselecting package (SUNWcnsu)
- Deselecting package (SUNWtnamd)
- Deselecting package (SUNWtnamr)
- Deselecting package (SUNWrcmdr)
- Deselecting package (SUNWrcmds)
- Deselecting package (SUNWtftp)
- Deselecting package (SUNWtftp)
- Deselecting package (SUNWcnsr)
- Deselecting package (SUNWatfsr)
- Deselecting package (SUNWatfsu)
- Deselecting package (SUNWftpr)
- Deselecting package (SUNWftpu)
- Deselecting package (SUNWipmi)
- Deselecting package (SUNWxsvc)
- Deselecting package (SUNWflexruntime)
- Deselecting package (SUNWxwmod)
- Selecting package (SUNWadmc)
- Selecting package (SUNWadmfr)
- Selecting package (SUNWadmfw)
- Selecting package (SUNWdtmdr)
- Selecting package (SUNWxwftnt)
- Selecting package (SUNWzip)
- Selecting package (SUNWless)
- Selecting package (SUNWeurf)
- Selecting package (SUNWj5rt)
- Selecting package (SUNWxwacx)
- Selecting package (SUNWxwice)
- Selecting package (SUNWxwplr)
- Selecting package (SUNWxwrtl)
- Selecting package (SUNWxwplt)
- Selecting package (SUNWxi18n)
- Selecting package (SUNWtltk)
- Selecting package (SUNWeuodf)
- Selecting package (SUNWocf)
- Selecting package (SUNWocfr)
- Selecting package (SUNWbtool)
- Selecting package (SUNWsprot)
- Selecting package (SUNWmdbdm)
- Selecting package (SUNWmkcd)
- Selecting package (SUNWspnego)
- Selecting package (SUNWtnfc)
- Selecting package (SUNWtnfd)
- Selecting package (SUNWbind)
- Selecting package (SUNWbindr)
- Selecting package (SUNWctpls)
- Selecting package (SUNWfss)
- Selecting package (SUNWgcmn)
- Selecting package (SUNWgssdh)
- Selecting package (SUNWgssk)
```

- Selecting package (SUNWinst)
- Selecting package (SUNWi15rf)
- Selecting package (SUNWipc)
- Selecting package (SUNWmdbr)
- Selecting package (SUNWmfrun)
- Selecting package (SUNWrsg)
- Selecting package (SUNWrsgk)
- Selecting package (SUNWter)
- Selecting package (SUNWtoo)
- Selecting package (SUNWl394)
- Selecting all disks
- Configuring boot device
- Using disk (c1t0d0) for "rootdisk"
- Deleting Solaris fdisk partition (c1t0d0)
- Deleting Solaris fdisk partition (c1t1d0)
- Creating "all" Solaris fdisk partition (c1t0d0)
- Creating "all" Solaris fdisk partition (c1t1d0)
- Configuring / (c1t0d0s0)
- Configuring /var (c1t0d0s1)
- Configuring swap (c1t0d0s3)
- Configuring (c1t0d0s4)
- Configuring (c1t0d0s6)
- Configuring /opt (c1t0d0s5)
- Deselecting unmodified disk (c1t1d0)

Verifying disk configuration

Verifying space allocation

- Total software size: 420.10 Mbytes

You may need to eject the CD or select a different boot device after reboot to avoid repeating the installation process.

Configuring disk (c1t0d0)

- Creating Fdisk partition table

Fdisk partition table for disk c1t0d0 (input file for fdisk(1M))

```

type: 130 active: 128 offset: 16065 size: 143347995
type: 100 active: 0 offset: 0 size: 0
type: 100 active: 0 offset: 0 size: 0
type: 100 active: 0 offset: 0 size: 0

```

- Creating Solaris disk label (VTOC)

Creating and checking UFS file systems

- Creating / (c1t0d0s0)

Warning: 1474 sector(s) in last cylinder unallocated

/dev/rdisk/c1t0d0s0:4096574 sectors in 667 cylinders of 48 tracks, 128 sectors
2000.3MB in 42 cyl groups (16 c/g, 48.00MB/g, 11648 i/g)

super-block backups (for fsck -F ufs -o b=#) at:

```

32, 98464, 196896, 295328, 393760, 492192, 590624, 689056, 787488, 885920,
3149856, 3248288, 3346720, 3445152, 3543584, 3642016, 3740448, 3838880,
3937312, 4035744

```

- Creating /var (c1t0d0s1)

Warning: 4866 sector(s) in last cylinder unallocated

/dev/rdisk/c1t0d0s1:10249470 sectors in 1669 cylinders of 48 tracks, 128 sectors
5004.6MB in 105 cyl groups (16 c/g, 48.00MB/g, 5824 i/g)

super-block backups (for fsck -F ufs -o b=#) at:

```

32, 98464, 196896, 295328, 393760, 492192, 590624, 689056, 787488, 885920,
9342880, 9441312, 9539744, 9638176, 9736608, 9835040, 9933472, 10031904,
10130336, 10228768

```

- Creating /opt (c1t0d0s5)

```

Warning: 1062 sector(s) in last cylinder unallocated
/dev/rdisk/clt0d0s5:116599770 sectors in 18978 cylinders of 48 tracks, 128 sectors
      56933.5MB in 1187 cyl groups (16 c/g, 48.00MB/g, 5824 i/g)
super-block backups (for fsck -F ufs -o b=#) at:
  32, 98464, 196896, 295328, 393760, 492192, 590624, 689056, 787488, 885920,
Initializing cylinder groups:
.....
super-block backups for last 10 cylinder groups at:
 115707040, 115805472, 115903904, 116002336, 116100768, 116199200, 116297632,
 116396064, 116494496, 116592928

Beginning Solaris software installation
23303 blocks

Installation of <SUNWcsu> was successful.
5043 blocks

Installation of <SUNWcsr> was successful.
21985 blocks

Installation of <SUNWcsl> was successful.
75 blocks

Installation of <SUNWcnetr> was successful.
43978 blocks

Installation of <SUNWckr> was successful.
30 blocks

Installation of <SUNWkvm> was successful.

Installation of <SUNWcar> was successful.

Installation of <SUNWcakr> was successful.
7 blocks
add c devices/pseudo/arp@0:arp (44, 0) 0666 root sys
add link /dev/arp=../devices/pseudo/arp@0:arp
add c devices/pseudo/clone@0:ibd (11, 170) 0666 root sys
add link /dev/ibd=../devices/pseudo/clone@0:ibd
add c devices/pseudo/icmp@0:icmp (5, 0) 0666 root sys
add link /dev/icmp=../devices/pseudo/icmp@0:icmp
add c devices/pseudo/icmp@0:icmp (5, 0) 0666 root sys
add link /dev/rawip=../devices/pseudo/icmp@0:icmp
add c devices/pseudo/icmp6@0:icmp6 (140, 1) 0666 root sys
add link /dev/icmp6=../devices/pseudo/icmp6@0:icmp6
add c devices/pseudo/icmp6@0:icmp6 (140, 1) 0666 root sys
add link /dev/rawip6=../devices/pseudo/icmp6@0:icmp6
add c devices/pseudo/ip@0:ip (3, 0) 0666 root sys
add link /dev/ip=../devices/pseudo/ip@0:ip
add c devices/pseudo/ip6@0:ip6 (139, 1) 0666 root sys
add link /dev/ip6=../devices/pseudo/ip6@0:ip6
add c devices/pseudo/rts@0:rts (43, 0) 0666 root sys
add link /dev/rts=../devices/pseudo/rts@0:rts
add c devices/pseudo/tcp@0:tcp (42, 2) 0666 root sys
add link /dev/tcp=../devices/pseudo/tcp@0:tcp
add c devices/pseudo/tcp6@0:tcp6 (142, 3) 0666 root sys
add link /dev/tcp6=../devices/pseudo/tcp6@0:tcp6
add c devices/pseudo/udp@0:udp (41, 0) 0666 root sys
add link /dev/udp=../devices/pseudo/udp@0:udp
add c devices/pseudo/udp6@0:udp6 (141, 1) 0666 root sys
add link /dev/udp6=../devices/pseudo/udp6@0:udp6
add c devices/pseudo/ipsec@0:ipsec (137, 1) 0666 root sys
add link /dev/ipsec=../devices/pseudo/ipsec@0:ipsec
add c devices/pseudo/ipsecesp@0:ipsecesp (138, 1) 0666 root sys

```

```

add link /dev/ipsecesp=../devices/pseudo/ipsecesp@0:ipsecesp
add c devices/pseudo/keysock@0:keysock (136, 0) 0666 root sys
add link /dev/keysock=../devices/pseudo/keysock@0:keysock
add c devices/pseudo/cn@0:console (0, 0) 0620 root tty
add link /dev/console=../devices/pseudo/cn@0:console
add c devices/pseudo/cn@0:syscon (0, 0) 0620 root tty
add link /dev/syscon=../devices/pseudo/cn@0:syscon
add c devices/pseudo/cn@0:systty (0, 0) 0620 root tty
add link /dev/systty=../devices/pseudo/cn@0:systty
add c devices/pseudo/devinfo@0:devinfo (88, 0) 0640 root sys
add c devices/pseudo/ksyms@0:ksyms (72, 0) 0666 root sys
add link /dev/ksyms=../devices/pseudo/ksyms@0:ksyms
add c devices/pseudo/log@0:conslog (21, 0) 0666 root sys
add link /dev/conslog=../devices/pseudo/log@0:conslog
add c devices/pseudo/log@0:log (21, 5) 0640 root sys
add link /dev/log=../devices/pseudo/log@0:log
add c devices/pseudo/mm@0:mem (13, 0) 0640 root sys
add link /dev/mem=../devices/pseudo/mm@0:mem
add c devices/pseudo/mm@0:kmem (13, 1) 0640 root sys
add link /dev/kmem=../devices/pseudo/mm@0:kmem
add c devices/pseudo/mm@0:null (13, 2) 0666 root sys
add link /dev/null=../devices/pseudo/mm@0:null
add c devices/pseudo/mm@0:allkmem (13, 3) 0600 root sys
add link /dev/allkmem=../devices/pseudo/mm@0:allkmem
add c devices/pseudo/mm@0:zero (13, 12) 0666 root sys
add link /dev/zero=../devices/pseudo/mm@0:zero
add c devices/pseudo/openeep@0:openprom (6, 0) 0640 root sys
add link /dev/openprom=../devices/pseudo/openeep@0:openprom
add c devices/pseudo/sad@0:admin (12, 1) 0666 root sys
add link /dev/sad/admin=../devices/pseudo/sad@0:admin
add c devices/pseudo/sad@0:user (12, 0) 0666 root sys
add link /dev/sad/user=../devices/pseudo/sad@0:user
add c devices/pseudo/sy@0:tty (22, 0) 0666 root tty
add link /dev/tty=../devices/pseudo/sy@0:tty
add c devices/pseudo/sysevent@0:sysevent (152, 0) 0600 root sys
add link /dev/sysevent=../devices/pseudo/sysevent@0:sysevent
add c devices/pseudo/sysmsg@0:msglog (97, 1) 0600 root sys
add link /dev/msglog=../devices/pseudo/sysmsg@0:msglog
add c devices/pseudo/sysmsg@0:sysmsg (97, 0) 0600 root sys
add link /dev/sysmsg=../devices/pseudo/sysmsg@0:sysmsg
add c devices/pseudo/tl@0:ticots (105, 0) 0666 root sys
add link /dev/ticots=../devices/pseudo/tl@0:ticots
add c devices/pseudo/tl@0:ticotsord (105, 1) 0666 root sys
add link /dev/ticotsord=../devices/pseudo/tl@0:ticotsord
add c devices/pseudo/tl@0:ticlts (105, 2) 0666 root sys
add link /dev/ticlts=../devices/pseudo/tl@0:ticlts
add c devices/pseudo/wc@0:wscons (15, 0) 0600 root sys
add link /dev/wscons=../devices/pseudo/wc@0:wscons
add c devices/pseudo/conskbd@0:kbd (103, 0) 0666 root sys
add link /dev/kbd=../devices/pseudo/conskbd@0:kbd

```

Installation of <SUNWcsd> was successful.
422 blocks

Installation of <SUNWzlib> was successful.
3826 blocks

Installation of <SUNWlibmsr> was successful.

Installation of <SUNWlibms> was successful.
5495 blocks

Installation of <SUNWlxml> was successful.


```
Installation of <SUNWxwrt1> was successful.

Installation of <SUNWbzip> was successful.
22155 blocks

Installation of <SUNWxfnt> was successful.
440 blocks

Installation of <SUNWxwice> was successful.
63 blocks

Installation of <SUNWxwdv> was successful.
3 blocks

Installation of <SUNWxwplr> was successful.
8688 blocks

Installation of <SUNWperl584core> was successful.
39013 blocks

Installation of <SUNWperl584usr> was successful.
3641 blocks

Installation of <SUNWesu> was successful.
118 blocks

Installation of <SUNWcpp> was successful.

Installation of <SUNWdtcor> was successful.
31656 blocks

Installation of <SUNWxwplt> was successful.
1019 blocks

Installation of <SUNWlexpt> was successful.

Installation of <SUNWgcmn> was successful.
116 blocks

Installation of <SUNWctpls> was successful.
18841 blocks

Installation of <SUNWmfrun> was successful.
260 blocks

Installation of <SUNWxwacx> was successful.
3 blocks

Installation of <SUNWsshdr> was successful.
390 blocks

Installation of <SUNWadmlib-sysid> was successful.
27 blocks

Installation of <SUNWadmr> was successful.
3755 blocks

Installation of <SUNWadmap> was successful.

Installation of <SUNWgssc> was successful.
554 blocks

Installation of <SUNWgss> was successful.
11613 blocks
```

Installation of <SUNWopenssl-libraries> was successful.
687 blocks

Installation of <SUNWsshcu> was successful.
694 blocks

Installation of <SUNWsshdu> was successful.

Installation of <SUNWdtdmr> was successful.
6063 blocks

Installation of <SUNWtltk> was successful.
134 blocks

Installation of <SUNWgzip> was successful.
173 blocks

Installation of <SUNWsshr> was successful.
970 blocks

Installation of <SUNWsshu> was successful.
11214 blocks

Installation of <SUNWlibc> was successful.
151975 blocks

Installation of <SUNWj5rt> was successful.
580 blocks

Installation of <SUNWwbsup> was successful.

Installation of <SUNWinstall-patch-utils-root> was successful.

Installation of <SUNWswmt> was successful.
5206 blocks

Installation of <SUNWmdr> was successful.
1139 blocks

Installation of <SUNWmdu> was successful.
2937 blocks

Installation of <SUNWadmc> was successful.
4275 blocks

Installation of <SUNWnfscckr> was successful.
89 blocks

Installation of <SUNWnfscr> was successful.
426 blocks

Installation of <SUNWnfscu> was successful.
8 blocks

Installation of <SUNWkrbr> was successful.
3840 blocks

Installation of <SUNWkrbu> was successful.
259 blocks

Installation of <SUNWbip> was successful.
237 blocks

Installation of <SUNWtnetc> was successful.
1498 blocks

Installation of <SUNWrcmdc> was successful.
4857 blocks
Reboot client to install driver.

Installation of <SUNWib> was successful.
2431 blocks
Reboot client to install driver.

Installation of <SUNWtavor> was successful.
599 blocks

Installation of <SUNWtcsh> was successful.
1085 blocks

Installation of <SUNWtecla> was successful.
1978 blocks

Installation of <SUNWter> was successful.
1975 blocks

Installation of <SUNWpr> was successful.
10669 blocks

Installation of <SUNWtls> was successful.
90 blocks

Installation of <SUNWtnetd> was successful.

Installation of <SUNWtnetr> was successful.
1039 blocks

Installation of <SUNWtnfc> was successful.
97 blocks

Installation of <SUNWtnfd> was successful.
1784 blocks

Installation of <SUNWtoo> was successful.

Installation of <SUNWucbt> was successful.

Installation of <SUNWudaplr> was successful.
382 blocks

Installation of <SUNWudaplu> was successful.
256 blocks

Installation of <SUNWipoib> was successful.
680 blocks

Installation of <SUNWudapltu> was successful.
559 blocks
Reboot client to install driver.

Installation of <SUNWudapltr> was successful.

Installation of <SUNWocfr> was successful.
974 blocks

Installation of <SUNWocf> was successful.
1580 blocks

```
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Removing empty OWconfig

Installation of <SUNWos86r> was successful.

Installation of <SUNWrmodr> was successful.
Reboot client to install driver.

Installation of <CADP160> was successful.
1069 blocks
Reboot client to install driver.

Installation of <SUNWaudd> was successful.
3863 blocks
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.
Reboot client to install driver.

Installation of <SUNWusb> was successful.
138 blocks

Installation of <SUNWusbs> was successful.
465 blocks
Reboot client to install driver.

Installation of <SUNWuedg> was successful.
732 blocks
Modifying /a/kernel/drv/sd.conf
Reboot client to install driver.

Installation of <HPFC> was successful.
66 blocks

Installation of <NCRos86r> was successful.
151 blocks
Reboot client to install driver.

Installation of <SUNWugen> was successful.
379 blocks
Reboot client to install driver.

Installation of <SK98sol> was successful.
679 blocks
Reboot client to install driver.

Installation of <SKfp> was successful.
8309 blocks

Installation of <SUNWeurf> was successful.
```

```
2429 blocks
Reboot client to install driver.

Installation of <SUNWl394> was successful.
1423 blocks

Installation of <SUNWxi18n> was successful.
95 blocks

Installation of <SUNWvld> was successful.
40 blocks

Installation of <SUNWvldu> was successful.
1198 blocks

Installation of <SUNWbash> was successful.

Installation of <SUNWproduct-registry-root> was successful.
817 blocks
registry conversion not required

Installation of <SUNWwsr2> was successful.
158 blocks
Reboot client to install driver.

Installation of <SUNWaac> was successful.
3 blocks

Installation of <SUNWaccr> was successful.
511 blocks

Installation of <SUNWaccu> was successful.

Installation of <SUNWgrub> was successful.

Installation of <SUNWadmfr> was successful.
1167 blocks

Installation of <SUNWadmfw> was successful.
80 blocks

Installation of <SUNWi15rf> was successful.
Reboot client to install driver.

Installation of <SUNWadp> was successful.

Installation of <SUNWradpu320> was successful.
1216 blocks
Reboot client to install driver.

Installation of <SUNWadpu320> was successful.
136 blocks
Reboot client to install driver.

Installation of <SUNWamr> was successful.
2519 blocks

Installation of <SUNWsprot> was successful.
190 blocks

Installation of <SUNWrsg> was successful.
453 blocks

Installation of <SUNWgssdh> was successful.
```

```
671 blocks

Installation of <SUNWgssk> was successful.
1251 blocks
Reboot client to install driver.

Installation of <SUNWxge> was successful.
2194 blocks

Installation of <SUNWbtool> was successful.
24616 blocks

Installation of <SUNWcslr> was successful.
1022 blocks

Installation of <SUNWidnl> was successful.
1830 blocks

Installation of <SUNWinst> was successful.
596 blocks
Reboot client to install driver.

Installation of <SUNWintgige> was successful.
41 blocks

Installation of <SUNWipc> was successful.
119 blocks

Installation of <SUNWipfr> was successful.
3499 blocks

Installation of <SUNWipfu> was successful.
6407 blocks
/a/etc/lu/synclist
Installing /a/etc/default/lu

Installation of <SUNWlur> was successful.
3495 blocks

Installation of <SUNWluu> was successful.
Reboot client to install driver.

Installation of <SUNWiscsir> was successful.

Installation of <SUNWiscsiu> was successful.
790 blocks

Installation of <SUNWloc> was successful.
83 blocks

Installation of <SUNWnlsr> was successful.
3891 blocks

Installation of <SUNWnlsu> was successful.
45 blocks

Installation of <SUNWzebrar> was successful.
4056 blocks

Installation of <SUNWzebrau> was successful.
267 blocks

Installation of <SUNWzip> was successful.
9 blocks
```

Installation of <SUNWzoner> was successful.
606 blocks

Installation of <SUNWluzone> was successful.

Installation of <SUNWpoolr> was successful.
1366 blocks

Installation of <SUNWpool> was successful.
878 blocks

Installation of <SUNWzoneu> was successful.
4985 blocks

Installation of <SUNWzsh> was successful.
Reboot client to install driver.

Installation of <SYMhis1> was successful.
72 blocks

Installation of <SUNWcpc> was successful.

Installation of <SUNWbindr> was successful.
4546 blocks

Installation of <SUNWbind> was successful.

Installation of <SUNWbipr> was successful.
Reboot client to install driver.

Installation of <SUNWcadp> was successful.
955 blocks
Reboot client to install driver.

Installation of <SUNWced> was successful.
161 blocks

Installation of <SUNWcfcl> was successful.

Installation of <SUNWcfclr> was successful.
253 blocks

Installation of <SUNWluxop> was successful.
594 blocks

Installation of <SUNWcfpl> was successful.
2 blocks

Installation of <SUNWcfplr> was successful.
3979 blocks

Installation of <SUNWjss> was successful.
918 blocks

Installation of <SUNWpcpu> was successful.
29 blocks
Reboot client to install driver.

Installation of <SUNWcqhpc> was successful.
215 blocks

Installation of <SUNWkey> was successful.
128 blocks

```
Installation of <SUNWeuodf> was successful.  
231 blocks  
  
Installation of <SUNWless> was successful.  
184 blocks  
  
Installation of <SUNWcstl> was successful.  
928 blocks  
  
Installation of <SUNWlibsasl> was successful.  
314 blocks  
  
Installation of <SUNWlldap> was successful.  
228 blocks  
Reboot client to install driver.  
  
Installation of <SUNWlsimega> was successful.  
10159 blocks  
  
Installation of <SUNWmdb> was successful.  
29 blocks  
  
Installation of <SUNWmdbdm> was successful.  
6853 blocks  
  
Installation of <SUNWmdbr> was successful.  
3972 blocks  
  
Installation of <SUNWdtrc> was successful.  
1313 blocks  
  
Installation of <SUNWdtrp> was successful.  
1227 blocks  
Reboot client to install driver.  
  
Installation of <SUNWfctl> was successful.  
3552 blocks  
Reboot client to install driver.  
  
Installation of <SUNWemlxs> was successful.  
2568 blocks  
  
Installation of <SUNWemlxu> was successful.  
174 blocks  
  
Installation of <SUNWmibii> was successful.  
1332 blocks  
  
Installation of <SUNWsasnm> was successful.  
1106 blocks  
  
Installation of <SUNWsadmi> was successful.  
328 blocks  
  
Installation of <SUNWsacom> was successful.  
40 blocks  
  
Installation of <SUNWmipr> was successful.  
468 blocks  
  
Installation of <SUNWmipu> was successful.  
844 blocks
```


Installation of <SUNWmkcd> was successful.
Modifying /a/etc/hba.conf

Installation of <SUNWfchbar> was successful.
3366 blocks

Installation of <SUNWfchba> was successful.
537 blocks
Reboot client to install driver.

Installation of <SUNWfcip> was successful.
312 blocks

Installation of <SUNWfcmdb> was successful.
803 blocks
Reboot client to install driver.

Installation of <SUNWfcp> was successful.
79 blocks

Installation of <SUNWfcprt> was successful.
361 blocks
Reboot client to install driver.

Installation of <SUNWfcsn> was successful.
3020 blocks

Installation of <SUNWfmd> was successful.
197 blocks

Installation of <SUNWfss> was successful.
275 blocks
Reboot client to install driver.

Installation of <SUNWnge> was successful.
1 blocks

Installation of <SUNWpkgcmdsr> was successful.
4530 blocks

Installation of <SUNWpkgcmdsu> was successful.
1509 blocks
Reboot client to install driver.

Installation of <SUNWpsdcr> was successful.

Installation of <SUNWsolnm> was successful.
590 blocks
Reboot client to install driver.

Installation of <SUNWpsdir> was successful.
3866 blocks
Reboot client to install driver.

Installation of <SUNWqlc> was successful.
387 blocks

Installation of <SUNWqos> was successful.
136 blocks

Installation of <SUNWqosu> was successful.
2 blocks

Installation of <SUNWrmodu> was successful.

```
497 blocks

Installation of <SUNWroute> was successful.
271 blocks
Reboot client to install driver.

Installation of <SUNWrpcib> was successful.
145 blocks

Installation of <SUNWrsgk> was successful.
89 blocks
Reboot client to install driver.

Installation of <SUNWrtls> was successful.
125 blocks

Installation of <SUNWspnego> was successful.

Solaris 10 software installation succeeded

Solaris 10 packages fully installed
SUNWcsu
SUNWcsr
SUNWcsl
SUNWcnetr
SUNWckr
SUNWkvm
SUNWcar
SUNWcakr
SUNWcsd
SUNWzlib
SUNWlibmsr
SUNWlibms
SUNWlxml
SUNWxwrtl
SUNWbzip
SUNWxwft
SUNWxwice
SUNWxwdv
SUNWxwplr
SUNWperl584core
SUNWperl584usr
SUNWesu
SUNWcpp
SUNWdtcor
SUNWxwplt
SUNWlexpt
SUNWgcmn
SUNWctpls
SUNWmfrun
SUNWxwacx
SUNWsshdr
SUNWadmlib-sysid
SUNWadmr
SUNWadmap
SUNWgssc
SUNWgss
SUNWopenssl-libraries
SUNWsshcu
SUNWsshdu
SUNWdtdmr
SUNWtltk
SUNWgzip
SUNWsshr
```

SUNWsshu
SUNWlibc
SUNWj5rt
SUNWwbsup
SUNWinstall-patch-utils-root
SUNWswmt
SUNWmdr
SUNWmdu
SUNWadm
SUNWnfscr
SUNWnfscr
SUNWnfscu
SUNWkrbr
SUNWkrbu
SUNWbip
SUNWtnetc
SUNWrcmdc
SUNWib
SUNWtavor
SUNWtcsh
SUNWtecla
SUNWter
SUNWpr
SUNWt1s
SUNWtnetd
SUNWtnetr
SUNWtnfc
SUNWtnfd
SUNWtoo
SUNWucbt
SUNWudaplr
SUNWudaplu
SUNWipoib
SUNWudapltu
SUNWudapltr
SUNWocfr
SUNWocf
SUNWos86r
SUNWrmodr
CADP160
SUNWaudd
SUNWusb
SUNWusbs
SUNWuedg
HPFC
NCRos86r
SUNWugen
SK98sol
SKfp
SUNWeurf
SUNW1394
SUNWxi18n
SUNWvld
SUNWvldu
SUNWbash
SUNWproduct-registry-root
SUNWwsr2
SUNWaac
SUNWaccr
SUNWaccu
SUNWgrub
SUNWadmfr
SUNWadmfw
SUNWi15rf

SUNWadp
SUNWradpu320
SUNWadpu320
SUNWamr
SUNWsprot
SUNWrsq
SUNWgssdh
SUNWgssk
SUNWxge
SUNWbtool
SUNWcslr
SUNWidnl
SUNWinst
SUNWintgige
SUNWipc
SUNWipfr
SUNWipfu
SUNWlur
SUNWluu
SUNWiscsir
SUNWiscsiu
SUNWloc
SUNWnlsr
SUNWnlsu
SUNWzebrar
SUNWzebrau
SUNWzip
SUNWzoner
SUNWluzone
SUNWpoolr
SUNWpool
SUNWzoneu
SUNWzsh
SYMhis1
SUNWcpc
SUNWbindr
SUNWbind
SUNWbipr
SUNWcadp
SUNWced
SUNWcfcl
SUNWcfclr
SUNWluxop
SUNWcfpl
SUNWcfplr
SUNWjss
SUNWpcu
SUNWcqhpc
SUNWkey
SUNWeuodf
SUNWless
SUNWcstl
SUNWlibsas1
SUNWlldap
SUNWlsimega
SUNWmdb
SUNWmdbdm
SUNWmdbr
SUNWdtrc
SUNWdtrp
SUNWfctl
SUNWemlxs
SUNWemlxu
SUNWmibii

```

SUNWsasnm
SUNWsadmi
SUNWsacom
SUNWmipr
SUNWmipu
SUNWmkcd
SUNWfchbar
SUNWfchba
SUNWfcip
SUNWfcmb
SUNWfcipr
SUNWfcsm
SUNWfmd
SUNWfss
SUNWnge
SUNWpkgcmdsr
SUNWpkgcmdsu
SUNWpsdcr
SUNWsolnm
SUNWpsdir
SUNWqlc
SUNWqos
SUNWqosu
SUNWrmodu
SUNWroute
SUNWrpcib
SUNWrsgk
SUNWrtls
SUNWspnego

```

Customizing system files

- Mount points table (/etc/vfstab)
 - fd- /dev/fdfd- no -
 - /proc-/procproc- no -
 - /dev/dsk/clt0d0s3--swap-no-
 - /dev/dsk/clt0d0s0/dev/rdisk/clt0d0s0/ufs1no-
 - /dev/dsk/clt0d0s1/dev/rdisk/clt0d0s1/varufs1no-
 - /dev/dsk/clt0d0s5/dev/rdisk/clt0d0s5/optufs2yes-
 - /devices-/devicesdevfs-no-
 - ctfs- /system/contractctfs-no-
 - objfs- /system/objectobjfs-no-
 - swap- /tmp/tmpfs- yes -
- Network host addresses (/etc/hosts)
- Network host addresses (/etc/hosts)
- Environment variables (/etc/default/init)

Cleaning devices

Customizing system devices

- Physical devices (/devices)
- Logical devices (/dev)

Installing boot information

- Updating boot environment configuration file
- Installing boot blocks (clt0d0)

Executing profile begin script...

Completed profile begin script.

Processing profile

- Selecting cluster (SUNWCreq)
- Deselecting cluster (SUNWCudf)
- Deselecting cluster (SUNWCbs)
- Deselecting cluster (SUNWCnfss)
- Deselecting cluster (SUNWCsndm)
- Deselecting cluster (SUNWCpcmc)
- Deselecting cluster (SUNWCpicl)
- Selecting cluster (SUNWCacc)
- Selecting cluster (SUNWCssh)
- Selecting cluster (SUNWCpool)
- Selecting cluster (SUNWCvld)
- Selecting cluster (SUNWCfwshl)
- Selecting cluster (SUNWClu)
- Selecting cluster (SUNWCcpc)
- Selecting cluster (SUNWCsea)
- Selecting cluster (SUNWCstl)
- Selecting cluster (SUNWCmip)
- Selecting cluster (SUNWCqos)
- Selecting cluster (SUNWCzone)
- Selecting cluster (SUNWCzebra)
- Deselecting package (SUNWauda)
- Deselecting package (SUNWad810)
- Deselecting package (SUNWvia823x)
- Deselecting package (SUNWcnsu)
- Deselecting package (SUNWtnamd)
- Deselecting package (SUNWtnamr)
- Deselecting package (SUNWrcmdr)
- Deselecting package (SUNWrcmds)
- Deselecting package (SUNWtftp)
- Deselecting package (SUNWtftpr)
- Deselecting package (SUNWcnsr)
- Deselecting package (SUNWatfsr)
- Deselecting package (SUNWatfsu)
- Deselecting package (SUNWftpr)
- Deselecting package (SUNWftpu)
- Deselecting package (SUNWipmi)
- Deselecting package (SUNWxsvc)
- Deselecting package (SUNWflexruntime)
- Deselecting package (SUNWxwmod)
- Selecting package (SUNWadmc)
- Selecting package (SUNWadmfr)
- Selecting package (SUNWadmfw)
- Selecting package (SUNWdtdmr)
- Selecting package (SUNWxwfnt)
- Selecting package (SUNWzip)
- Selecting package (SUNWless)
- Selecting package (SUNWeurf)
- Selecting package (SUNWj5rt)
- Selecting package (SUNWxwacx)
- Selecting package (SUNWxwice)
- Selecting package (SUNWxwplr)
- Selecting package (SUNWxwrtl)
- Selecting package (SUNWxwplt)
- Selecting package (SUNWxi18n)
- Selecting package (SUNWtltk)
- Selecting package (SUNWeuodf)
- Selecting package (SUNWocf)
- Selecting package (SUNWocfr)
- Selecting package (SUNWbtool)
- Selecting package (SUNWsprt)
- Selecting package (SUNWmdbdm)

```

- Selecting package (SUNWmkcd)
- Selecting package (SUNWspnego)
- Selecting package (SUNWtnfc)
- Selecting package (SUNWtnfd)
- Selecting package (SUNWbind)
- Selecting package (SUNWbindr)
- Selecting package (SUNWctpls)
- Selecting package (SUNWfss)
- Selecting package (SUNWgcmn)
- Selecting package (SUNWgssdh)
- Selecting package (SUNWgssk)
- Selecting package (SUNWinst)
- Selecting package (SUNWi15rf)
- Selecting package (SUNWipc)
- Selecting package (SUNWmdbr)
- Selecting package (SUNWmfrun)
- Selecting package (SUNWrsg)
- Selecting package (SUNWrsgk)
- Selecting package (SUNWter)
- Selecting package (SUNWtoo)
- Selecting package (SUNW1394)
- Selecting all disks
- Configuring boot device
- Using disk (clt0d0) for "rootdisk"
- Deleting Solaris fdisk partition (clt0d0)
- Deleting Solaris fdisk partition (clt1d0)
- Creating "all" Solaris fdisk partition (clt0d0)
- Creating "all" Solaris fdisk partition (clt1d0)
- Configuring / (clt0d0s0)
- Configuring /var (clt0d0s1)
- Configuring swap (clt0d0s3)
- Configuring (clt0d0s4)
- Configuring (clt0d0s6)
- Configuring /opt (clt0d0s5)
- Deselecting unmodified disk (clt1d0)

```

Verifying disk configuration

Verifying space allocation

```
- Total software size: 420.10 Mbytes
```

You may need to eject the CD or select a different boot device after reboot to avoid repeating the installation process.

Configuring disk (clt0d0)

```
- Creating Fdisk partition table
```

Fdisk partition table for disk clt0d0 (input file for fdisk(1M))

```

type: 130 active: 128 offset: 16065 size: 143347995
type: 100 active: 0 offset: 0 size: 0
type: 100 active: 0 offset: 0 size: 0
type: 100 active: 0 offset: 0 size: 0

```

```
- Creating Solaris disk label (VTOC)
```

Creating and checking UFS file systems

```
- Creating / (clt0d0s0)
```

Warning: 1474 sector(s) in last cylinder unallocated

/dev/rdisk/clt0d0s0:4096574 sectors in 667 cylinders of 48 tracks, 128 sectors

2000.3MB in 42 cyl groups (16 c/g, 48.00MB/g, 11648 i/g)

super-block backups (for fsck -F ufs -o b=#) at:

32, 98464, 196896, 295328, 393760, 492192, 590624, 689056, 787488, 885920,

```

3149856, 3248288, 3346720, 3445152, 3543584, 3642016, 3740448, 3838880,
3937312, 4035744
- Creating /var (c1t0d0s1)
Warning: 4866 sector(s) in last cylinder unallocated
/dev/rdisk/c1t0d0s1:10249470 sectors in 1669 cylinders of 48 tracks, 128 sectors
5004.6MB in 105 cyl groups (16 c/g, 48.00MB/g, 5824 i/g)
super-block backups (for fsck -F ufs -o b=#) at:
32, 98464, 196896, 295328, 393760, 492192, 590624, 689056, 787488, 885920,
9342880, 9441312, 9539744, 9638176, 9736608, 9835040, 9933472, 10031904,
10130336, 10228768
- Creating /opt (c1t0d0s5)
Warning: 1062 sector(s) in last cylinder unallocated
/dev/rdisk/c1t0d0s5:116599770 sectors in 18978 cylinders of 48 tracks, 128 sectors
56933.5MB in 1187 cyl groups (16 c/g, 48.00MB/g, 5824 i/g)
super-block backups (for fsck -F ufs -o b=#) at:
32, 98464, 196896, 295328, 393760, 492192, 590624, 689056, 787488, 885920,
Initializing cylinder groups:
.....
super-block backups for last 10 cylinder groups at:
115707040, 115805472, 115903904, 116002336, 116100768, 116199200, 116297632,
116396064, 116494496, 116592928

Beginning Solaris software installation
23303 blocks

Installation of <SUNWcsu> was successful.
5043 blocks

Installation of <SUNWcsr> was successful.
21985 blocks

Installation of <SUNWcsl> was successful.
75 blocks

Installation of <SUNWcnetr> was successful.
43978 blocks

Installation of <SUNWckr> was successful.
30 blocks

Installation of <SUNWkvm> was successful.

Installation of <SUNWcar> was successful.

Installation of <SUNWcakr> was successful.
7 blocks
add c devices/pseudo/arp@0:arp (44, 0) 0666 root sys
add link /dev/arp=../devices/pseudo/arp@0:arp
add c devices/pseudo/clone@0:ibd (11, 170) 0666 root sys
add link /dev/ibd=../devices/pseudo/clone@0:ibd
add c devices/pseudo/icmp@0:icmp (5, 0) 0666 root sys
add link /dev/icmp=../devices/pseudo/icmp@0:icmp
add c devices/pseudo/icmp@0:icmp (5, 0) 0666 root sys
add link /dev/rawip=../devices/pseudo/icmp@0:icmp
add c devices/pseudo/icmp6@0:icmp6 (140, 1) 0666 root sys
add link /dev/icmp6=../devices/pseudo/icmp6@0:icmp6
add c devices/pseudo/icmp6@0:icmp6 (140, 1) 0666 root sys
add link /dev/rawip6=../devices/pseudo/icmp6@0:icmp6
add c devices/pseudo/ip@0:ip (3, 0) 0666 root sys
add link /dev/ip=../devices/pseudo/ip@0:ip
add c devices/pseudo/ip6@0:ip6 (139, 1) 0666 root sys
add link /dev/ip6=../devices/pseudo/ip6@0:ip6
add c devices/pseudo/rts@0:rts (43, 0) 0666 root sys
add link /dev/rts=../devices/pseudo/rts@0:rts

```



```

add c devices/pseudo/tcp@0:tcp (42, 2) 0666 root sys
add link /dev/tcp=../devices/pseudo/tcp@0:tcp
add c devices/pseudo/tcp6@0:tcp6 (142, 3) 0666 root sys
add link /dev/tcp6=../devices/pseudo/tcp6@0:tcp6
add c devices/pseudo/udp@0:udp (41, 0) 0666 root sys
add link /dev/udp=../devices/pseudo/udp@0:udp
add c devices/pseudo/udp6@0:udp6 (141, 1) 0666 root sys
add link /dev/udp6=../devices/pseudo/udp6@0:udp6
add c devices/pseudo/ipsec@0:ipsec (137, 1) 0666 root sys
add link /dev/ipsec=../devices/pseudo/ipsec@0:ipsec
add c devices/pseudo/ipsec@0:ipsec (138, 1) 0666 root sys
add link /dev/ipsec=../devices/pseudo/ipsec@0:ipsec
add c devices/pseudo/keysock@0:keysock (136, 0) 0666 root sys
add link /dev/keysock=../devices/pseudo/keysock@0:keysock
add c devices/pseudo/cn@0:console (0, 0) 0620 root tty
add link /dev/console=../devices/pseudo/cn@0:console
add c devices/pseudo/cn@0:syscon (0, 0) 0620 root tty
add link /dev/syscon=../devices/pseudo/cn@0:syscon
add c devices/pseudo/cn@0:systty (0, 0) 0620 root tty
add link /dev/systty=../devices/pseudo/cn@0:systty
add c devices/pseudo/devinfo@0:devinfo (88, 0) 0640 root sys
add c devices/pseudo/ksyms@0:ksyms (72, 0) 0666 root sys
add link /dev/ksyms=../devices/pseudo/ksyms@0:ksyms
add c devices/pseudo/log@0:conslog (21, 0) 0666 root sys
add link /dev/conslog=../devices/pseudo/log@0:conslog
add c devices/pseudo/log@0:log (21, 5) 0640 root sys
add link /dev/log=../devices/pseudo/log@0:log
add c devices/pseudo/mm@0:mem (13, 0) 0640 root sys
add link /dev/mem=../devices/pseudo/mm@0:mem
add c devices/pseudo/mm@0:kmem (13, 1) 0640 root sys
add link /dev/kmem=../devices/pseudo/mm@0:kmem
add c devices/pseudo/mm@0:null (13, 2) 0666 root sys
add link /dev/null=../devices/pseudo/mm@0:null
add c devices/pseudo/mm@0:allkmem (13, 3) 0600 root sys
add link /dev/allkmem=../devices/pseudo/mm@0:allkmem
add c devices/pseudo/mm@0:zero (13, 12) 0666 root sys
add link /dev/zero=../devices/pseudo/mm@0:zero
add c devices/pseudo/openeprom@0:openprom (6, 0) 0640 root sys
add link /dev/openprom=../devices/pseudo/openeprom@0:openprom
add c devices/pseudo/sad@0:admin (12, 1) 0666 root sys
add link /dev/sad/admin=../devices/pseudo/sad@0:admin
add c devices/pseudo/sad@0:user (12, 0) 0666 root sys
add link /dev/sad/user=../devices/pseudo/sad@0:user
add c devices/pseudo/sy@0:tty (22, 0) 0666 root tty
add link /dev/tty=../devices/pseudo/sy@0:tty
add c devices/pseudo/sysevent@0:sysevent (152, 0) 0600 root sys
add link /dev/sysevent=../devices/pseudo/sysevent@0:sysevent
add c devices/pseudo/sysmsg@0:msglog (97, 1) 0600 root sys
add link /dev/msglog=../devices/pseudo/sysmsg@0:msglog
add c devices/pseudo/sysmsg@0:sysmsg (97, 0) 0600 root sys
add link /dev/sysmsg=../devices/pseudo/sysmsg@0:sysmsg
add c devices/pseudo/tl@0:ticots (105, 0) 0666 root sys
add link /dev/ticots=../devices/pseudo/tl@0:ticots
add c devices/pseudo/tl@0:ticotsord (105, 1) 0666 root sys
add link /dev/ticotsord=../devices/pseudo/tl@0:ticotsord
add c devices/pseudo/tl@0:ticlts (105, 2) 0666 root sys
add link /dev/ticlts=../devices/pseudo/tl@0:ticlts
add c devices/pseudo/wc@0:wscons (15, 0) 0600 root sys
add link /dev/wscons=../devices/pseudo/wc@0:wscons
add c devices/pseudo/conskbd@0:kbd (103, 0) 0666 root sys
add link /dev/kbd=../devices/pseudo/conskbd@0:kbd

```

Installation of <SUNWcsd> was successful.
422 blocks

```
Installation of <SUNWzlib> was successful.  
3826 blocks  
  
Installation of <SUNWlibmsr> was successful.  
  
Installation of <SUNWlibms> was successful.  
5495 blocks  
  
Installation of <SUNWlxml> was successful.  
  
Installation of <SUNWxwrtl> was successful.  
  
Installation of <SUNWbzip> was successful.  
22155 blocks  
  
Installation of <SUNWxfnt> was successful.  
440 blocks  
  
Installation of <SUNWxwice> was successful.  
63 blocks  
  
Installation of <SUNWxwdv> was successful.  
3 blocks  
  
Installation of <SUNWxwplr> was successful.  
8688 blocks  
  
Installation of <SUNWperl584core> was successful.  
39013 blocks  
  
Installation of <SUNWperl584usr> was successful.  
3641 blocks  
  
Installation of <SUNWesu> was successful.  
118 blocks  
  
Installation of <SUNWcpp> was successful.  
  
Installation of <SUNWdtcor> was successful.  
31656 blocks  
  
Installation of <SUNWxwplt> was successful.  
1019 blocks  
  
Installation of <SUNWlexpt> was successful.  
  
Installation of <SUNWgcmn> was successful.  
116 blocks  
  
Installation of <SUNWctpls> was successful.  
18841 blocks  
  
Installation of <SUNWmfrun> was successful.  
260 blocks  
  
Installation of <SUNWxwacx> was successful.  
3 blocks  
  
Installation of <SUNWsshdr> was successful.  
390 blocks  
  
Installation of <SUNWadmlib-sysid> was successful.  
27 blocks
```

Installation of <SUNWadmr> was successful.
3755 blocks

Installation of <SUNWadmap> was successful.

Installation of <SUNWgssc> was successful.
554 blocks

Installation of <SUNWgss> was successful.
11613 blocks

Installation of <SUNWopenssl-libraries> was successful.
687 blocks

Installation of <SUNWsshcu> was successful.
694 blocks

Installation of <SUNWsshdu> was successful.

Installation of <SUNWdtdmr> was successful.
6063 blocks

Installation of <SUNWtltk> was successful.
134 blocks

Installation of <SUNWgzip> was successful.
173 blocks

Installation of <SUNWsshr> was successful.
970 blocks

Installation of <SUNWsshu> was successful.
11214 blocks

Installation of <SUNWlibC> was successful.
151975 blocks

Installation of <SUNWj5rt> was successful.
580 blocks

Installation of <SUNWwbsup> was successful.

Installation of <SUNWinstall-patch-utils-root> was successful.

Installation of <SUNWswmt> was successful.
5206 blocks

Installation of <SUNWmdr> was successful.
1139 blocks

Installation of <SUNWmdu> was successful.
2937 blocks

Installation of <SUNWadmc> was successful.
4275 blocks

Installation of <SUNWnfscrk> was successful.
89 blocks

Installation of <SUNWnfscr> was successful.
426 blocks

Installation of <SUNWnfscu> was successful.

```
8 blocks

Installation of <SUNWkrbr> was successful.
3840 blocks

Installation of <SUNWkrbu> was successful.
259 blocks

Installation of <SUNWbip> was successful.
237 blocks

Installation of <SUNWtnetc> was successful.
1498 blocks

Installation of <SUNWrcmdc> was successful.
4857 blocks
Reboot client to install driver.

Installation of <SUNWib> was successful.
2431 blocks
Reboot client to install driver.

Installation of <SUNWtavor> was successful.
599 blocks

Installation of <SUNWtcsh> was successful.
1085 blocks

Installation of <SUNWtecla> was successful.
1978 blocks

Installation of <SUNWter> was successful.
1975 blocks

Installation of <SUNWpr> was successful.
10669 blocks

Installation of <SUNWtls> was successful.
90 blocks

Installation of <SUNWtnetd> was successful.

Installation of <SUNWtnetr> was successful.
1039 blocks

Installation of <SUNWtnfc> was successful.
97 blocks

Installation of <SUNWtnfd> was successful.
1784 blocks

Installation of <SUNWtoo> was successful.

Installation of <SUNWucbt> was successful.

Installation of <SUNWudaplr> was successful.
382 blocks

Installation of <SUNWudaplu> was successful.
256 blocks

Installation of <SUNWipoib> was successful.
680 blocks
```

```
Installation of <SUNWudapltu> was successful.  
559 blocks  
Reboot client to install driver.
```

```
Installation of <SUNWudapltr> was successful.
```

```
Installation of <SUNWocfr> was successful.  
974 blocks
```

```
Installation of <SUNWocf> was successful.  
1580 blocks
```

```
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Removing empty OWconfig
```

```
Installation of <SUNWos86r> was successful.
```

```
Installation of <SUNWrmodr> was successful.  
Reboot client to install driver.
```

```
Installation of <CADP160> was successful.  
1069 blocks  
Reboot client to install driver.
```

```
Installation of <SUNWaudd> was successful.  
3863 blocks
```

```
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.  
Reboot client to install driver.
```

```
Installation of <SUNWusb> was successful.  
138 blocks
```

```
Installation of <SUNWusbs> was successful.  
465 blocks  
Reboot client to install driver.
```

```
Installation of <SUNWuedg> was successful.  
732 blocks  
Modifying /a/kernel/drv/sd.conf  
Reboot client to install driver.
```

```
Installation of <HPFC> was successful.  
66 blocks
```

```
Installation of <NCRos86r> was successful.  
151 blocks  
Reboot client to install driver.
```

```
Installation of <SUNWugen> was successful.
```

```
379 blocks
Reboot client to install driver.

Installation of <SK98sol> was successful.
679 blocks
Reboot client to install driver.

Installation of <SKfp> was successful.
8309 blocks

Installation of <SUNWeurf> was successful.
2429 blocks
Reboot client to install driver.

Installation of <SUNW1394> was successful.
1423 blocks

Installation of <SUNWxi18n> was successful.
95 blocks

Installation of <SUNWvld> was successful.
40 blocks

Installation of <SUNWvldu> was successful.
1198 blocks

Installation of <SUNWbash> was successful.

Installation of <SUNWproduct-registry-root> was successful.
817 blocks
registry conversion not required

Installation of <SUNWwsr2> was successful.
158 blocks
Reboot client to install driver.

Installation of <SUNWaac> was successful.
3 blocks

Installation of <SUNWaccr> was successful.
511 blocks

Installation of <SUNWaccu> was successful.

Installation of <SUNWgrub> was successful.

Installation of <SUNWadmfr> was successful.
1167 blocks

Installation of <SUNWadmfw> was successful.
80 blocks

Installation of <SUNWi15rf> was successful.
Reboot client to install driver.

Installation of <SUNWadp> was successful.

Installation of <SUNWradpu320> was successful.
1216 blocks
Reboot client to install driver.

Installation of <SUNWadpu320> was successful.
136 blocks
Reboot client to install driver.
```

Installation of <SUNWamr> was successful.
2519 blocks

Installation of <SUNWsprot> was successful.
190 blocks

Installation of <SUNWrsg> was successful.
453 blocks

Installation of <SUNWgssdh> was successful.
671 blocks

Installation of <SUNWgssk> was successful.
1251 blocks
Reboot client to install driver.

Installation of <SUNWxge> was successful.
2194 blocks

Installation of <SUNWbtool> was successful.
24616 blocks

Installation of <SUNWcslr> was successful.
1022 blocks

Installation of <SUNWidnl> was successful.
1830 blocks

Installation of <SUNWinst> was successful.
596 blocks
Reboot client to install driver.

Installation of <SUNWintgige> was successful.
41 blocks

Installation of <SUNWipc> was successful.
119 blocks

Installation of <SUNWipfr> was successful.
3499 blocks

Installation of <SUNWipfu> was successful.
6407 blocks
/a/etc/lu/synclist
Installing /a/etc/default/lu

Installation of <SUNWlur> was successful.
3495 blocks

Installation of <SUNWluu> was successful.
Reboot client to install driver.

Installation of <SUNWiscsir> was successful.

Installation of <SUNWiscsiu> was successful.
790 blocks

Installation of <SUNWloc> was successful.
83 blocks

Installation of <SUNWnir> was successful.
3891 blocks

```
Installation of <SUNWhisu> was successful.  
45 blocks  
  
Installation of <SUNWzebrar> was successful.  
4056 blocks  
  
Installation of <SUNWzebrau> was successful.  
267 blocks  
  
Installation of <SUNWzip> was successful.  
9 blocks  
  
Installation of <SUNWzoner> was successful.  
606 blocks  
  
Installation of <SUNWluzone> was successful.  
  
Installation of <SUNWpoolr> was successful.  
1366 blocks  
  
Installation of <SUNWpool> was successful.  
878 blocks  
  
Installation of <SUNWzoneu> was successful.  
4985 blocks  
  
Installation of <SUNWzsh> was successful.  
Reboot client to install driver.  
  
Installation of <SYMhis1> was successful.  
72 blocks  
  
Installation of <SUNWcpc> was successful.  
  
Installation of <SUNWbindr> was successful.  
4546 blocks  
  
Installation of <SUNWbind> was successful.  
  
Installation of <SUNWbipr> was successful.  
Reboot client to install driver.  
  
Installation of <SUNWcadp> was successful.  
955 blocks  
Reboot client to install driver.  
  
Installation of <SUNWced> was successful.  
161 blocks  
  
Installation of <SUNWcfcl> was successful.  
  
Installation of <SUNWcfclr> was successful.  
253 blocks  
  
Installation of <SUNWluxop> was successful.  
594 blocks  
  
Installation of <SUNWcfpl> was successful.  
2 blocks  
  
Installation of <SUNWcfplr> was successful.  
3979 blocks  
  
Installation of <SUNWjss> was successful.
```


918 blocks

Installation of <SUNWcpcu> was successful.
29 blocks
Reboot client to install driver.

Installation of <SUNWcqhcp> was successful.
215 blocks

Installation of <SUNWkey> was successful.
128 blocks

Installation of <SUNWeuodf> was successful.
231 blocks

Installation of <SUNWless> was successful.
184 blocks

Installation of <SUNWcstl> was successful.
928 blocks

Installation of <SUNWlibsasl> was successful.
314 blocks

Installation of <SUNWlldap> was successful.
228 blocks
Reboot client to install driver.

Installation of <SUNWlsimega> was successful.
10159 blocks

Installation of <SUNWmdb> was successful.
29 blocks

Installation of <SUNWmdbdm> was successful.
6853 blocks

Installation of <SUNWmdbr> was successful.
3972 blocks

Installation of <SUNWdtrc> was successful.
1313 blocks

Installation of <SUNWdtrp> was successful.
1227 blocks
Reboot client to install driver.

Installation of <SUNWfctl> was successful.
3552 blocks
Reboot client to install driver.

Installation of <SUNWemlxs> was successful.
2568 blocks

Installation of <SUNWemlxu> was successful.
174 blocks

Installation of <SUNWmibii> was successful.
1332 blocks

Installation of <SUNWsasnm> was successful.
1106 blocks

Installation of <SUNWsadmi> was successful.

```
328 blocks

Installation of <SUNWsacom> was successful.
40 blocks

Installation of <SUNWmipr> was successful.
468 blocks

Installation of <SUNWmipu> was successful.
844 blocks

Installation of <SUNWmkcd> was successful.
Modifying /a/etc/hba.conf

Installation of <SUNWfchbar> was successful.
3366 blocks

Installation of <SUNWfchba> was successful.
537 blocks
Reboot client to install driver.

Installation of <SUNWfcip> was successful.
312 blocks

Installation of <SUNWfcmdb> was successful.
803 blocks
Reboot client to install driver.

Installation of <SUNWfcp> was successful.
79 blocks

Installation of <SUNWfcprt> was successful.
361 blocks
Reboot client to install driver.

Installation of <SUNWfcsm> was successful.
3020 blocks

Installation of <SUNWfmd> was successful.
197 blocks

Installation of <SUNWfss> was successful.
275 blocks
Reboot client to install driver.

Installation of <SUNWnge> was successful.
1 blocks

Installation of <SUNWpkgcmdsr> was successful.
4530 blocks

Installation of <SUNWpkgcmdsu> was successful.
1509 blocks
Reboot client to install driver.

Installation of <SUNWpsdcr> was successful.

Installation of <SUNWsolnm> was successful.
590 blocks
Reboot client to install driver.

Installation of <SUNWpsdir> was successful.
3866 blocks
Reboot client to install driver.
```

Installation of <SUNWqlc> was successful.
387 blocks

Installation of <SUNWqos> was successful.
136 blocks

Installation of <SUNWqosu> was successful.
2 blocks

Installation of <SUNWrmodu> was successful.
497 blocks

Installation of <SUNWroute> was successful.
271 blocks
Reboot client to install driver.

Installation of <SUNWrpcib> was successful.
145 blocks

Installation of <SUNWrsgk> was successful.
89 blocks
Reboot client to install driver.

Installation of <SUNWrtls> was successful.
125 blocks

Installation of <SUNWspnego> was successful.

Solaris 10 software installation succeeded

Solaris 10 packages fully installed

SUNWcsu
SUNWcsr
SUNWcsl
SUNWcnetr
SUNWckr
SUNWkvm
SUNWcar
SUNWcakr
SUNWcsd
SUNWzlib
SUNWlibmsr
SUNWlibms
SUNWlxml
SUNWxwrtl
SUNWbzip
SUNWxfnt
SUNWxwice
SUNWxwdv
SUNWxwplr
SUNWperl584core
SUNWperl584usr
SUNWesu
SUNWcpp
SUNWdtcor
SUNWxwplt
SUNWlexpt
SUNWgcmn
SUNWctpls
SUNWmfrun
SUNWxwacx
SUNWsshdr
SUNWadmlib-sysid

SUNWadmr
SUNWadmap
SUNWgssc
SUNWgss
SUNWopenssl-libraries
SUNWsshcu
SUNWsshdu
SUNWtdtmdr
SUNWtltk
SUNWgzip
SUNWsshr
SUNWsshu
SUNWlibC
SUNWj5rt
SUNWwbsup
SUNWinstall-patch-utils-root
SUNWswmt
SUNWmdr
SUNWmdu
SUNWadmc
SUNWnfscr
SUNWnfscr
SUNWnfscu
SUNWkrbr
SUNWkrbu
SUNWbip
SUNWtnetc
SUNWrcmdc
SUNWib
SUNWtavor
SUNWtcsh
SUNWtecla
SUNWter
SUNWpr
SUNWtls
SUNWtnetd
SUNWtnetr
SUNWtnfc
SUNWtnfd
SUNWtoo
SUNWucbt
SUNWudaplr
SUNWudaplu
SUNWipoib
SUNWudapltu
SUNWudapltr
SUNWocfr
SUNWocf
SUNWos86r
SUNWrmodr
CADP160
SUNWaudd
SUNWusb
SUNWusbs
SUNWuedg
HPFC
NCRos86r
SUNWugen
SK98sol
SKfp
SUNWeurf
SUNW1394
SUNWxi18n
SUNWvld

SUNWvldu
SUNWbash
SUNWproduct-registry-root
SUNWwsr2
SUNWaac
SUNWacrr
SUNWaccu
SUNWgrub
SUNWadmfr
SUNWadmfw
SUNWi15rf
SUNWadp
SUNWradpu320
SUNWadpu320
SUNWamr
SUNWsprt
SUNWrsgr
SUNWgssdh
SUNWgssk
SUNWxge
SUNWbtool
SUNWcslr
SUNWidnl
SUNWinst
SUNWintgige
SUNWipc
SUNWipfr
SUNWipfu
SUNWlur
SUNWluu
SUNWiscsir
SUNWiscsiu
SUNWloc
SUNWnlsr
SUNWnlsu
SUNWzebrar
SUNWzebrau
SUNWzip
SUNWzoner
SUNWluzone
SUNWpoolr
SUNWpool
SUNWzoneu
SUNWzsh
SYMhisl
SUNWcpc
SUNWbindr
SUNWbind
SUNWbipr
SUNWcadp
SUNWced
SUNWcfc1
SUNWcfc1r
SUNWluxop
SUNWcfpl
SUNWcfplr
SUNWjss
SUNWcpcu
SUNWcqhpc
SUNWkey
SUNWeuodf
SUNWless
SUNWcstl
SUNWlibsas1

```

SUNWlldap
SUNWlsimega
SUNWmdb
SUNWmdbdm
SUNWmdbr
SUNWdtrc
SUNWdtrp
SUNWfctl
SUNWemlxs
SUNWemlxu
SUNWmibii
SUNWsasnm
SUNWsadmi
SUNWsaacom
SUNWmipr
SUNWmipu
SUNWmkcd
SUNWfchbar
SUNWfchba
SUNWfcip
SUNWfcmdb
SUNWfcp
SUNWfcprt
SUNWfcsn
SUNWfmd
SUNWfss
SUNWnge
SUNWpkgcmdsr
SUNWpkgcmdsu
SUNWpsdcr
SUNWsolnm
SUNWpsdir
SUNWqlc
SUNWqos
SUNWqosu
SUNWrmodu
SUNWroute
SUNWrpcib
SUNWrsgk
SUNWrtls
SUNWspnego

```

Customizing system files

- Mount points table (/etc/vfstab)
 - fd- /dev/fdfd- no -
 - /proc-/procproc- no -
 - /dev/dsk/clt0d0s3--swap-no-
 - /dev/dsk/clt0d0s0/dev/rdisk/clt0d0s0/ufs1no-
 - /dev/dsk/clt0d0s1/dev/rdisk/clt0d0s1/varufs1no-
 - /dev/dsk/clt0d0s5/dev/rdisk/clt0d0s5/optufs2yes-
 - /devices-/devicesdevfs-no-
 - ctfs- /system/contractctfs-no-
 - objfs-/system/objectobjfs-no-
 - swap- /tmptmpfs- yes -
- Network host addresses (/etc/hosts)
- Network host addresses (/etc/hosts)
- Environment variables (/etc/default/init)

Cleaning devices

Customizing system devices

- Physical devices (/devices)
- Logical devices (/dev)

```
Installing boot information
- Updating boot environment configuration file
- Installing boot blocks (c1t0d0)
```

```
Installation complete
Executing SolStart postinstall phase...
Executing finish script "patch_finish"...
```

```
Finish script patch_finish execution completed.
Executing JumpStart postinstall phase...
all finished
```

```
Finish script any_finish execution completed.
```

```
The begin script log 'begin.log'
is located in /var/sadm/system/logs after reboot.
```

```
The finish script log 'finish.log'
is located in /var/sadm/system/logs after reboot.
```

**Note**

You may be prompted during the reboot to enter **Ctrl-B** or **Ctrl-C** to open configuration tools for your hardware. You do not need to open any of these tools to complete this installation.

**Caution**

The CD is automatically ejected from the CD-ROM drive prior to rebooting to ensure that the host is rebooted from the newly installed operating system. Do not reinsert the CD into the CD-ROM drive at this time.

```
syncing file systems... done
rebooting...
Resetting ...
```

**Note**

You can select your terminal type from the picklist or the default terminal type (from the serial port). Cisco recommends that you use the default terminal while you are installing software.

```
screen not found.
Can't open input device.
Keyboard not present. Using ttya for input and output.
```

```
SunFire V40z, No Keyboard
OpenBoot 3.23, 4096 MB memory installed, Serial #12797485.
Ethernet address 8:0:20:c3:46:2d, Host ID: 80c3462d.
```

```
Rebooting with command: boot
Boot device: /pci@1f,4000/scsi@3/disk@0,0:a File and args:
SunOS Release 5.10 Version Generic 64-bit
Copyright 1983-2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
Hostname: va-host
Configuring devices.
Loading smf(5) service descriptions: 67/67
checking ufs filesystems
/dev/rdisk/c0t0d0s5: is logging.
Creating new rsa public/private host key pair
Creating new dsa public/private host key pair
```

```
Configuring network interface addresses: ce0 hme0 hme1
```

```
This system is configured with NFS version 4, which uses a domain
name that is automatically derived from the system's name services.
The derived domain name is sufficient for most configurations. In a
few cases, mounts that cross different domains might cause files to
be owned by "nobody" due to the lack of a common domain name.
```

```
Do you need to override the system's default NFS version 4 domain
name (yes/no) ? [no] :
```

Step 7 Enter **no** to continue the reconfiguration process and press **Enter**.

The system displays information similar to the following:

```
For more information about how the NFS version 4 default domain
name is derived and its impact, refer to the man pages for nfs(4)
and nfsmapid(1m), and the System Administration Guide: Network
Services.
```

```
vtghost console login:
```

This completes the installation of the Sun Solaris 10 operating system. Proceed to the [“Configuring Your Host” section on page 2-50](#).

Configuring Your Host

Step 1 If you are already logged in to your host platform, proceed to Step 2. Otherwise log in as **root** and use the default password, **vtghost**. The system displays something similar to the following:

```
Sep  8 01:15:08 vtghost login: ROOT LOGIN /dev/console
Sun Microsystems Inc.   SunOS 5.10       Generic January 2005.
#
```

Step 2 Reconfigure the system by entering the **sys-unconfig** command and pressing **Enter**.

A screen similar to the following is displayed:

```
WARNING
```

```
This program will unconfigure your system.  It will cause it
to revert to a "blank" system - it will not have a name or know
about other systems or networks.
```

```
This program will also halt the system.
```

```
Do you want to continue (y/n) ?
```

Step 3 Enter **y** to continue the reconfiguration process and press **Enter**.

The system displays information similar to the following:

```
svc.startd: The system is coming down.  Please wait.
svc.startd: 57 system services are now being stopped.
Sep  8 01:22:21 vtghost rpcbind: rpcbind terminating on signal.
```

```
svc.startd: The system is down.
syncing file systems... done
Program terminated
{1} ok
```


Step 4 Reboot your system using the method identified for your platform type:

- Sparc-based platforms—Enter the **boot** command and press **Enter** to reboot the system.
- Opteron-based platforms—Press any key to reboot the system.



Note

If you are installing Solaris 10 on an Opteron-based platform, you might be prompted during the reboot to enter **Ctrl-B** or **Ctrl-C** to open configuration tools for your hardware. You do not need to open any of these tools to complete this installation.

The system displays information similar to the following:

```
SC Alert: Host System has Reset
  Probing system devices
  Probing memory
  Probing I/O buses

Sun Fire V210, No Keyboard
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
OpenBoot 4.18.5, 2048 MB memory installed, Serial #52030991.
Ethernet address 0:3:ba:19:ee:f, Host ID: 8319ee0f.

Initializing      1MB of memory at addr      103feec000
Initializing      1MB of memory at addr      103fee0000
Initializing     15MB of memory at addr      103f002000
Initializing     16MB of memory at addr      103e002000
Initializing     992MB of memory at addr      1000000000
Initializing    1024MB of memory at addr      0
Rebooting with command: boot
Boot device: /pci@1c,600000/scsi@2/disk@0,0:a File and args:
SunOS Release 5.10 Version Generic_118833-17 64-bit
Copyright 1983-2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
Hardware watchdog enabled
Hostname: unknown
Configuring devices.
checking ufs filesystems
/dev/rdisk/clt0d0s5: is logging.
```

Step 5 If you are installing on a Sparc-based platform, you must select your terminal type when a screen similar to the following is displayed:

```
What type of terminal are you using?
1) ANSI Standard CRT
2) DEC VT52
3) DEC VT100
4) Heathkit 19
5) Lear Siegler ADM31
6) PC Console
7) Sun Command Tool
8) Sun Workstation
9) Televideo 910
10) Televideo 925
11) Wyse Model 50
12) X Terminal Emulator (xterms)
13) CDE Terminal Emulator (dtterm)
13) Other
Type the number of your choice and press Return:
```

**Note**

On Opteron-based platforms, you can select a terminal type from the picklist, or the default terminal type (from the serial port) is used. We recommend that you use the default terminal while you are installing software.

Enter the number that corresponds to the terminal you are using and press **Enter**. For example, if you are using an X terminal emulator, type **12** and press **Enter**.

The system displays information similar to the following:

```
Creating new rsa public/private host key pair
Creating new dsa public/private host key pair
Configuring network interface addresses: bge0 bge1 bge2 bge3.
```

Text similar to the following is displayed:

```
in.rdisc: No interfaces up
- Network Connectivity -----

Specify Yes if the system is connected to the network by one of the Solaris
or vendor network/communication Ethernet cards that are supported on the
Solaris CD. Refer to your hardware documentation for the current list of
supported cards.
Specify No if the system is connected to a network/communication card that
is not supported on the Solaris CD, and follow the instructions listed under
Help.

Networked
-----
[X] Yes
[ ] No

-----
ESC-2_Continue    ESC-6_Help
```

Step 6 Use the arrow keys to navigate, and press the spacebar to make your selection. Verify that **Yes** is selected, and press **ESC-2** to continue.

Text similar to the following is displayed:

```
- Configure Multiple Network Interfaces -----

Multiple network interfaces have been detected on this system. Specify all
of the network interfaces you want to configure.

Note: You must choose at least one interface to configure.

Network interfaces
-----
[ ] bge0
[ ] bge1
[ ] bge2
[ ] bge3

-----
ESC-2_Continue    ESC-6_Help
```

**Note**

This screen may show a different interface, depending on the platform and PCI card that are installed. For details, see [Table 2-1 on page 2-3](#) (“Device Names on Supported Host Platforms”).

**Caution**

The interface configuration prompts do not provide an option to return to a previous step or exit interface configuration. If you enter an incorrect value, power down the Cisco PGW 2200 Softswitch, power up the Cisco PGW 2200 Softswitch, and return to Step 4.

Step 7 Select the interface(s) you want to configure and press **ESC-2** to continue.

If you chose to configure a single interface, proceed to Step 9.

If you chose to configure multiple interfaces, proceed to Step 8.

Step 8 Text similar to the following is displayed:

```
- Primary Network Interface -----

On this screen you must specify which of the following network adapters is
the system's primary network interface. Usually the correct choice is the
lowest number. However, do not guess; ask your system administrator if
you're not sure.

> To make a selection, use the arrow keys to highlight the option and
press Return to mark it [X].

Primary network interface
-----
[ ] bge0
[ ] bge1
[ ] bge2
[ ] bge3

-----
ESC-2_Continue    ESC-6_Help
```

Select your primary network interface and press **ESC-2** to continue.

Step 9 Text similar to the following is displayed:

```
- DHCP for bge0 -----

Specify whether or not this network interface should use DHCP to configure
itself. Choose Yes if DHCP is to be used, or No if the network interface is
to be configured manually.

NOTE: DHCP support will not be enabled, if selected, until after the system
reboots.

Use DHCP for bge0
-----
[ ] Yes
[X] No

-----
ESC-2_Continue    ESC-6_Help
```

Step 10 Verify that **No** is selected and press **ESC-2** to continue.

Text similar to the following is displayed:

```
- Host Name for bge0 -----

Enter the host name which identifies this system on the network.  The name
must be unique within your domain; creating a duplicate host name will cause
problems on the network after you install Solaris.

A host name must be at least two characters; it can contain letters, digits,
and minus signs (-).

Host name for bge0:

-----
ESC-2_Continue    ESC-6_Help
```



Caution

If you are configuring your system with multiple interfaces, remember that each interface must have a unique name. Using the same name for multiple interfaces causes the installation script to enter a loop, forcing you to reboot your system.

Step 11 Type the **host name** of the target Netra machine, and press **ESC-2** to continue.



Note

For machine-specific information such as host name, see your notes in [“Preparing for Sun Solaris Operating System and Cisco PGW 2200 Softswitch Software Installation” Table 1-3](#), [“Machine-Specific Checklist”](#) if you used the checklist to note the host name.

Text similar to the following is displayed:

```
- IP Address for bge0 -----

Enter the Internet Protocol (IP) address for this network interface.  It
must be unique and follow your site's address conventions, or a
system/network failure could result.

IP addresses contain four sets of numbers separated by periods (for example
129.200.9.1).

IP address:

-----
ESC-2_Continue    ESC-6_Help
```

Step 12 Enter the **IP address** of this interface in dotted decimal format and press **ESC-2** to continue.



Note

See [“Machine-Specific Checklist”](#) in [Table 1-3](#) if you used the checklist to record the IP address.

Text similar to the following is displayed:

```
- Subnet for bge0 -----

On this screen you must specify whether this system is part of a subnet.  If
you specify incorrectly, the system will have problems communicating on the
network after you reboot.

> To make a selection, use the arrow keys to highlight the option and
press Return to mark it [X].
```

```
System part of a subnet
-----
```

```
[X] Yes
[ ] No
```

```
-----
ESC-2_Continue    ESC-6_Help
```

**Note**

If you need to modify your IP addresses after you have installed Sun Solaris 10, there are three files you need to update, instead of the two files required in previous releases of Sun Solaris operating system software. The following files must be edited in order to modify the IP address for an interface:

```
/etc/inet/hosts
/etc/hostname.inf_name
/etc/inet/ipnodes
```

Where *inf_name* is the name of the interface, such as bge1.

- Step 13** Verify that **Yes** is selected (use the arrow keys to move the cursor to **Yes** and press the spacebar to select it). Press **ESC-2** to continue.

A screen similar to the following is displayed:

```
- Netmask for bge0 -----

On this screen you must specify the netmask of your subnet.  A default
netmask is shown; do not accept the default unless you are sure it is
correct for your subnet.  A netmask must contain four sets of numbers
separated by periods (for example 255.255.255.0).

Netmask:

-----
ESC-2_Continue    ESC-6_Help
```

- Step 14** Enter the site-specific **Subnet Mask** for the subnet (see “[Site-Specific Information](#)” in [Table 1-2](#), if you recorded the information provided by your site administrator in this table). Press **ESC-2** to continue.

Text similar to the following is displayed:

```
- IPv6 for bge0 -----

Specify whether or not you want to enable IPv6, the next generation Internet
Protocol, on this network interface.  Enabling IPv6 will have no effect if
this machine is not on a network that provides IPv6 service.  IPv4 service
will not be affected if IPv6 is enabled.

> To make a selection, use the arrow keys to highlight the option and
press Return to mark it [X].

Enable IPv6 for bge0
-----
[ ] Yes
[X] No
```

```
-----
ESC-2_Continue    ESC-6_Help
```

**Note**

The system takes approximately 30 seconds to process this selection. A countdown appears in the display after you activate your choice.

Step 15 Verify that **No** is selected and press **ESC-2** to continue.

Text similar to the following is displayed:

```
- Set the Default Route for bge0 -----
```

To specify the default route, you can let the software try to detect one upon reboot, you can specify the IP address of the router, or you can choose None. Choose None if you do not have a router on your subnet.

> To make a selection, use the arrow keys to select your choice and press Return to mark it [X].

```
Default Route for bge0
-----
[ ] Detect one upon reboot
[X] Specify one
[ ] None
```

```
-----
ESC-2_Continue    ESC-6_Help
```

Step 16 Verify that **Specify one** is selected and press **ESC-2** to continue.

Text similar to the following is displayed:

```
- Default Route IP Address for bge0 -----
```

Enter the IP address of the default route. This entry will be placed in the /etc/defaultrouter file and will be the default route after you reboot (example 129.146.89.225).

```
Router IP Address for bge0
```

```
-----
ESC_Continue    ESC-6_Help
```

Step 17 Enter the Router IP address of this interface in dotted decimal format and press **ESC-2** to continue.

**Note**

See “[Solaris 10 Required Media Checklist](#)” in [Table 1-2](#) if you used the checklist to record the router IP address.

Text similar to the following is displayed:

```
- Confirm Information for bge0 -----
```

> Confirm the following information. If it is correct, press F2; to change any information, press F4.

```

Primary network interface: Yes
Use DHCP: No
Host name: va-host
IP address: 10.74.49.153
System part of a subnet: Yes
Netmask: 255.255.255.224
Enable IPv6: No
Default Route: Specify one
Router IP Address: 10.74.49.129

```

```

-----
ESC-2_Continue    ESC-4_Change    ESC-6_Help

```

- Step 18** Confirm the information displayed. Press **ESC-2** to accept the information and continue, or press **ESC-4** to go back and make changes.



Note The system takes approximately 30 seconds to process this selection. A countdown appears in the display after you activate your choice.

If you chose to configure a single interface, proceed to Step 20.
If you chose to configure multiple interfaces, proceed to Step 19.

- Step 19** Repeat steps 9 through 18 for your next interface. These steps should be repeated until all of your interfaces are configured.

- Step 20** Text similar to the following is displayed:

```

- Configure Security Policy: -----

Specify Yes if the system will use the Kerberos security mechanism.

Specify No if this system will use standard UNIX security.

Configure Kerberos Security
-----
[ ] Yes
[X] No

-----
ESC-2_Continue    ESC-6_Help

```

- Step 21** Verify that **No** is selected and press **ESC-2** to continue.

Text similar to the following is displayed:

```

- Confirm Information -

> Confirm the following information. If it is correct, press F2;
to change any information, press F4.

Configure Kerberos Security: No

-----
ESC-2_Continue    ESC-4_Change    ESC-6_Help

```

- Step 22** Confirm your previous answer of **No** and press **ESC-2** to continue.

Text similar to the following is displayed:

- Name Service -----

On this screen you must provide name service information. Select the name service that will be used by this system, or None if your system will either not use a name service at all, or if it will use a name service not listed here.

> To make a selection, use the arrow keys to highlight the option and press Return to mark it [X].

```
Name service
-----
[ ] NIS+
[ ] NIS
[ ] DNS
[ ] LDAP
[X] None
```

ESC-2_Continue ESC-6_Help

Step 23 Use the arrow keys to move the cursor to **None** and press the spacebar to select it. Press **ESC-2** to continue. Text similar to the following is displayed:

- DNS Search List -----

On this screen you can enter a list of domains that will be searched when a DNS query is made. If you do not enter any domains, DNS will only search the DNS domain chosen for this system. The domains entered, when concatenated, may not be longer than 250 characters.

```
Search domain: yourdomain.com
Search domain:
Search domain:
Search domain:
Search domain:
Search domain:
```

ESC-2_Continue ESC-6_Help

Step 24 Enter the **names of the search domains** for this system and press **ESC-2** to continue.



Note See “[Machine-Specific Checklist](#)”, [Table 1-3](#), if you used the checklist to record the names of the search domains.

Text similar to the following is displayed:

- Confirm Information -----

> Confirm the following information. If it is correct, press F2;
to change any information, press F4.


```
Name service: NONE
Domain name:
Server address(es):
Search domain(s): yourdomain.com
```

```
-----
ESC-2_Continue    ESC-4_Change    ESC-6_Help
```

Step 25 Confirm your previous answers and press **ESC-2** to continue.

Text similar to the following is displayed:

```
- Time Zone -----

On this screen you must specify your default time zone. You can specify a
time zone in three ways: select one of the continents or oceans from the
list, select other - offset from GMT, or other - specify time zone file.

> To make a selection, use the arrow keys to highlight the option and
press Return to mark it [X].

Continents and Oceans
-----
- [ ] Africa
x [ ] Americas
x [ ] Antarctica
x [ ] Arctic Ocean
x [ ] Asia
x [ ] Atlantic Ocean
x [ ] Australia
x [ ] Europe
v [ ] Indian Ocean
-----
ESC-2_Continue    ESC-6_Help
```

Step 26 Select the time zone where the system is located.



Note The following two steps show how to set the time zone. The example shows United States Eastern time.

- a. Use the arrow keys to move the cursor to Americas and press the spacebar to select it, then press **ESC-2** to continue.

Text similar to the following is displayed:

```
- Country or Region -----

> To make a selection, use the arrow keys to highlight the option and
press Return to mark it [X].

Countries and Regions
-----
- [ ] United States
x [ ] Anguilla
x [ ] Antigua & Barbuda
x [ ] Argentina
x [ ] Aruba
x [ ] Bahamas
x [ ] Barbados
```

```

x  [ ] Belize
x  [ ] Bolivia
x  [ ] Brazil
x  [ ] Canada
x  [ ] Cayman Islands
v  [ ] Chile    press Return to mark it [X].

```

```

-----
ESC-2_Continue    ESC-6_Help

```

- b. Use the arrow keys to move the cursor to United States and press the spacebar to select it, then press **ESC-2** to continue.

Text similar to the following is displayed:

```

- Time Zone -----

```

```

> To make a selection, use the arrow keys to highlight the option and
  press Return to mark it [X].

```

```

Time zones
-----
-  [ ] Eastern Time
x  [ ] Eastern Time - Michigan - most locations
x  [ ] Eastern Time - Kentucky - Louisville area
x  [ ] Eastern Time - Kentucky - Wayne County
x  [ ] Eastern Standard Time - Indiana - most locations
x  [ ] Eastern Standard Time - Indiana - Crawford County
x  [ ] Eastern Standard Time - Indiana - Starke County
x  [ ] Eastern Standard Time - Indiana - Switzerland County
x  [ ] Central Time
x  [ ] Central Time - Michigan - Wisconsin border
x  [ ] Central Time - North Dakota - Oliver County
x  [ ] Mountain Time
v  [ ] Mountain Time - south Idaho & east Oregon

```

```

-----
ESC-2_Continue    ESC-6_Help

```

- c. Use the arrow keys to move the cursor to your time zone (in this example, “Eastern Time” is selected) and press the space bar to select it. Press **ESC-2** to continue.

Text similar to the following is displayed:

```

- Date and Time -----

```

```

> Accept the default date and time or enter
  new values.

```

```

Date and time: 2008-09-08 02:58

```

```

Year   (4 digits) : 2008
Month  (1-12)     : 09
Day    (1-31)     : 08
Hour   (0-23)     : 02
Minute (0-59)     : 58

```

```

-----
ESC-2_Continue    ESC-6_Help

```

Step 27 Enter the correct date and time and press **ESC-2** to continue.

Text similar to the following is displayed:

```

- Confirm Information -----

> Confirm the following information.  If it is correct, press F2;
  to change any information, press F4.

      Time zone: Eastern Time
                (US/Eastern)
      Date and time: 2008-09-08 02:58:00

-----

      ESC-2_Continue      ESC-4_Change      ESC-6_Help

```

Step 28 Verify the information and press **ESC-2** to continue.

Text similar to the following might be displayed:

```

This system is configured with NFS version 4, which uses a domain
name that is automatically derived from the system's name services.
The derived domain name is sufficient for most configurations. In a
few cases, mounts that cross different domains might cause files to
be owned by "nobody" due to the lack of a common domain name.

```

```

Do you need to override the system's default NFS version 4 domain
name (yes/no) ? [no] :

```

Step 29 Enter **no** to continue the reconfiguration process and press **Enter**.

Text similar to the following is displayed:

```

For more information about how the NFS version 4 default domain
name is derived and its impact, see the man pages for nfs(4)
and nfsmapid(1m), and the System Administration Guide: Network
Services.

```

```

rebooting system due to change(s) in /etc/default/init

```

```

syncing file systems... done
rebooting...

```

```

SC Alert: Host System has Reset
Probing system devices
Probing memory
Probing I/O buses

```



Note

On Opteron-based platforms, you can select a terminal type from the picklist, or the default terminal type (serial port). We recommend that you use the default terminal type while you are installing software.

```

Sun Fire V210, No Keyboard
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
OpenBoot 4.18.5, 2048 MB memory installed, Serial #52030991.
Ethernet address 0:3:ba:19:ee:f, Host ID: 8319ee0f.

```

```

Initializing      1MB of memory at addr      103feec000
Initializing      1MB of memory at addr      103fee0000
Initializing      15MB of memory at addr     103f002000
Initializing      16MB of memory at addr     103e002000

```

```

Initializing 992MB of memory at addr 1000000000
Initializing 1024MB of memory at addr 0

Rebooting with command: boot
Boot device: /pci@1c,600000/scsi@2/disk@0,0:a File and args:
SunOS Release 5.10 Version Generic_118833-17 64-bit
Copyright 1983-2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
Hardware watchdog enabled
Hostname: bge0
checking ufs filesystems
/dev/rdisk/c1t0d0s5: is logging.

bge0 console login: root
Sep 8 03:00:15 bge0 login: ROOT LOGIN /dev/console

```

Step 30 If you want to enable root access to the Cisco PGW 2200 Softswitch via telnet, follow these steps:

- a. Edit the `/etc/default/login` file, and make the following changes:
 - Comment out the line starting with “**CONSOLE=**” by inserting a “#” in front of this line.
 - Add the line “`svcadm enable telnet`” if you want to enable telnet.
 - Add the line “`svcadm enable rlogin`” if you want to enable remote login.
- b. Save your changes to this file.

Step 31 If you want to enable root access to the Cisco PGW 2200 Softswitch via SSH, follow these steps:

- a. Edit the `/etc/ssh/sshd_config` file and change the value of the **PermitRootLogin** parameter from **no** to **yes**.
- b. Save your changes to this file.
- c. Identify the process ID of the `sshd` process by entering the following command:

```
ps -ef | grep ssh
```

- d. Restart the `sshd` process and activate your changes by entering the following command:

```
kill -1 process_id
```

Where *process_id* is the `ssh` process ID number identified in the previous step.

You have completed configuring your host. Proceed to the [“Platform-Specific Installation Procedures” section on page 2-62](#).

Platform-Specific Installation Procedures

Complete the following steps to install files specific to your Cisco platform:

Step 1 Log in as **root** and use the default password, `vtghost`. The system displays something similar to the following:

```

Sep 8 03:05:15 bge0 login: ROOT LOGIN /dev/console
Last login: Mon Sep 8 03:00:22 on console
Sun Microsystems Inc. SunOS 5.10 Generic January 2005

```

Step 2 Reinsert the CD into the CD-ROM drive.

Step 3 Mount the CD-ROM in the `cdrom` directory by entering the following command:

```
# mount -F hsfs -o ro /dev/dsk/devname /cdrom
```

Where *devname* is the device name for the primary CD-ROM drive. The following device names are valid:

- `c0t0d0s0`—Device name for primary CD-ROM on a Sparc-based platform.
- `c0t0d0p0`—Device name for primary CD-ROM on an Opteron-based platform.

Step 4 Run the **core_finish** script by entering the appropriate command:

- For Sparc-based platforms: `./cdrom/core_finish/core_finish.sh`
- For Opteron-based platforms: `./cdrom/core_finish/core_finish.sh`

Step 5 Enter the name of your host and press **Enter** as prompted.



Note Entering the name of your host at this time does not set the UNIX host name value. The value you enter here is used to set up a crash directory: `/var/hostname/crash`

The system returns a response similar to the following:

```
Start installation of core extra packages
Adding <SUNWvts>

Processing package instance <SUNWvts> from </opt/xtrapkgs>

SunVTS Framework(sparc) 6.2,REV=2006.05.04.11.52
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.

Installing SunVTS Framework as <SUNWvts>

## Installing part 1 of 1.
/opt/SUNWvts/README
/opt/SUNWvts/bin/.platform_table
/opt/SUNWvts/bin/.sunvts_release
/opt/SUNWvts/bin/.sunvts_sec
/opt/SUNWvts/bin/.sunvts_sec_gss
/opt/SUNWvts/bin/.version

...

/opt/SUNWvts/lib/sparcv9/libvtsutil.so <symbolic link>
/opt/SUNWvts/lib/sparcv9/libvtsutil.so.1
[ verifying class <none> ]
Copyright 2006 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

Installation of <SUNWvts> was successful.
Adding <SUNWvtsr>

Processing package instance <SUNWvtsr> from </opt/xtrapkgs>

SunVTS Framework (Root)(sparc) 6.2,REV=2006.05.04.11.52
Using </> as the package base directory.
## Processing package information.
## Processing system information.
2 package pathnames are already properly installed.
```

```

Installing SunVTS Framework (Root) as <SUNWvtsr>

## Installing part 1 of 1.
/etc/opt/SUNWvts/sunvts.conf.example
[ verifying class <none> ]
Copyright 2006 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

Installation of <SUNWvtsr> was successful.
Adding <SUNWvts>

Processing package instance <SUNWvts> from </opt/xtrapkgs>

SunVTS for Tests(sparc) 6.2,REV=2006.05.04.11.52
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
    14 package pathnames are already properly installed.

Installing SunVTS for Tests as <SUNWvts>

## Installing part 1 of 1.
/opt/SUNWvts/bin/bios.bin <symbolic link>
/opt/SUNWvts/bin/cmos.bin <symbolic link>
/opt/SUNWvts/bin/env6test
/opt/SUNWvts/bin/hsc1btest
/opt/SUNWvts/bin/i2c2test
/opt/SUNWvts/bin/nalmtest

...
/opt/SUNWvts/lib/probe/sparcv9/vmemtest_probe.so
/opt/SUNWvts/lib/probe/ssptest_probe.so
/opt/SUNWvts/lib/probe/sunlink_probe.so
[ verifying class <none> ]
Copyright 2006 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

Installation of <SUNWvts> was successful.
Adding <SUNWvts>

Processing package instance <SUNWvts> from </opt/xtrapkgs>

Sun(TM) Explorer Data Collector(all) 5.5,REV=2006.07.14.01.46
## Executing checkinstall script.
Copyright 1996-2006 Sun Microsystems, Inc.
All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.

Installing Sun(TM) Explorer Data Collector as <SUNWvts>

## Executing preinstall script.
## Installing part 1 of 1.
/opt/SUNWvts/LICENSEREADME/LICENSE.txt
/opt/SUNWvts/LICENSEREADME/THIRDPARTYLICENSEREADME.txt
/opt/SUNWvts/LICENSEREADME/gzip-1.2.4a.tar.gz
/opt/SUNWvts/bin/capture.sparc

...

/opt/SUNWvts/tools/var
/opt/SUNWvts/tools/vtsst

```

```

/opt/SUNWexplo/tools/vxfs
/opt/SUNWexplo/tools/vxvm
[ verifying class <none> ]
## Executing postinstall script.
/usr/bin/catman is not available for use
Please run: catman -w -M /opt/SUNWexplo/man manually

Installation of <SUNWexplo> was successful.
Adding <SUNWexplu>

Processing package instance <SUNWexplu> from </opt/xtrapkgs>

Sun(TM) Explorer Data Collector Config Files(all) 5.5,REV=2006.07.14.01.46
## Executing checkinstall script.
Copyright 1996-2006 Sun Microsystems, Inc.
All rights reserved.
Using </> as the package base directory.
## Processing package information.
## Processing system information.
    2 package pathnames are already properly installed.

Installing Sun(TM) Explorer Data Collector Config Files as <SUNWexplu>

## Installing part 1 of 1.
/etc/opt/SUNWexplo/LICENSEREADME/LICENSE.txt
/etc/opt/SUNWexplo/t3files.txt
[ verifying class <none> ]
Modifying /etc/opt/SUNWexplo/1280input.txt
Modifying /etc/opt/SUNWexplo/alominput.txt
Modifying /etc/opt/SUNWexplo/b1600input.txt
Modifying /etc/opt/SUNWexplo/b1600switchinput.txt
Modifying /etc/opt/SUNWexplo/ilominput.txt
Modifying /etc/opt/SUNWexplo/indyinput.txt
Modifying /etc/opt/SUNWexplo/ipmiinput.txt
Modifying /etc/opt/SUNWexplo/saninput.txt
Modifying /etc/opt/SUNWexplo/scinput.txt
Modifying /etc/opt/SUNWexplo/se3kinput.txt
Modifying /etc/opt/SUNWexplo/se6320input.txt
Modifying /etc/opt/SUNWexplo/se6920input.txt
Modifying /etc/opt/SUNWexplo/srscinput.txt
Modifying /etc/opt/SUNWexplo/t3input.txt
[ verifying class <build> ]
## Executing postinstall script.

Installation of <SUNWexplu> was successful.
Adding <SUNWpsr>

Processing package instance <SUNWpsr> from </opt/xtrapkgs>

Solaris Print - LP Server, (root)(sparc) 13.1,REV=2005.01.21.15.53
Using </> as the package base directory.
## Processing system information.
    11 package pathnames are already properly installed.

Installing Solaris Print - LP Server, (root) as <SUNWpsr>

## Executing preinstall script.
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
## Installing part 1 of 1.
19 blocks
[ verifying class <renameold> ]
[ verifying class <preserve> ]
[ verifying class <manifest> ]

```

```

## Executing postinstall script.

Installation of <SUNWpsr> was successful.
Adding <SUNWpcr>

Processing package instance <SUNWpcr> from </opt/xtrapkgs>

Solaris Print - Client, (root)(sparc) 13.1,REV=2005.01.21.15.53
Using </> as the package base directory.
## Processing package information.
## Processing system information.
    10 package pathnames are already properly installed.

Installing Solaris Print - Client, (root) as <SUNWpcr>

## Installing part 1 of 1.
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
2 blocks
[ verifying class <preserve> ]
[ verifying class <manifest> ]
## Executing postinstall script.

Installation of <SUNWpcr> was successful.
Adding <SUNWpcu>

Processing package instance <SUNWpcu> from </opt/xtrapkgs>

Solaris Print - Client, (usr)(sparc) 13.1,REV=2005.01.21.15.53
Using </> as the package base directory.
## Processing package information.
## Processing system information.
    4 package pathnames are already properly installed.

Installing Solaris Print - Client, (usr) as <SUNWpcu>

## Installing part 1 of 1.
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
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541 blocks

Installation of <SUNWpcu> was successful.
Adding <SUNWpsu>

Processing package instance <SUNWpsu> from </opt/xtrapkgs>

Solaris Print - LP Server, (usr)(sparc) 13.1,REV=2005.01.21.15.53
Using </> as the package base directory.
## Processing package information.
## Processing system information.
    12 package pathnames are already properly installed.

Installing Solaris Print - LP Server, (usr) as <SUNWpsu>

## Installing part 1 of 1.
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3090 blocks

Installation of <SUNWpsu> was successful.
Adding <SFWSudo>

Processing package instance <SFWSudo> from </opt/xtrapkgs>

```



```
Sudo - superuser do(sparc) 1.6.8.5,REV=2006.03.26.16.30
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
```

```
Installing Sudo - superuser do as <SFWsudo>
```

```
## Installing part 1 of 1.
/opt/sfw/READMEs/README.SFWsudo
/opt/sfw/bin/sudo
/opt/sfw/etc/sudoers
/opt/sfw/man/man1m/sudo.1m
/opt/sfw/man/man1m/visudo.1m
/opt/sfw/man/man4/sudoers.4
/opt/sfw/sbin/visudo
[ verifying class <none> ]
Sudo is distributed under the following ISC-style license:
```

```
Copyright (c) 1994-1996,1998-2004 Todd C. Miller <Todd.Miller@courtesan.com>
```

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```

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Additionally, err.c, lsearch.c, fnmatch.c, getcwd.c, snprintf.c, strcasecmp.c,
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SUPPORT OR WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

Installation of <SFWsudo> was successful.

SUNW,Sun-Fire-V210 does not need LOM packages
Validating patches...

Loading patches installed on the system...

Done!

Loading patches requested to install.

Done!

Checking patches that you specified for installation.

Done!

Approved patches will be installed in this order:

123526-01

Checking installed patches...
Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...

Patch 123526-01 has been successfully installed.
See /var/sadm/patch/123526-01/log for details

Patch packages installed:
SUNWcslr

Validating patches...

Loading patches installed on the system...

Done!

Loading patches requested to install.

Done!

Checking patches that you specified for installation.

Done!

Approved patches will be installed in this order:

119963-08

Checking installed patches...
Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...

Patch 119963-08 has been successfully installed.
See /var/sadm/patch/119963-08/log for details

Patch packages installed:
SUNWlibc

Validating patches...

Loading patches installed on the system...

Done!

Loading patches requested to install.

Done!

The following requested patches have packages not installed on the system
Package SUNWarc from directory SUNWarc in patch 119578-30 is not installed on the system.
Changes for package SUNWarc will not be applied to the system.
Package SUNWhea from directory SUNWhea in patch 119578-30 is not installed on the system.
Changes for package SUNWhea will not be applied to the system.
Package FJSVfmd from directory FJSVfmd in patch 119578-30 is not installed on the system.
Changes for package FJSVfmd will not be applied to the system.

Checking patches that you specified for installation.

Done!

Approved patches will be installed in this order:

119578-30

Checking installed patches...
Executing prepatch script...
Temporarily disabling fmd(1M)
Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...

Patch 119578-30 has been successfully installed.
See /var/sadm/patch/119578-30/log for details
Executing postpatch script...
Re-enabling fmd(1M)

Patch packages installed:
SUNWckr
SUNWcsl
SUNWcsu
SUNWfmd

Validating patches...

Loading patches installed on the system...

Done!

Loading patches requested to install.

Done!

The following requested patches have packages not installed on the system
Package SUNWarc from directory SUNWarc in patch 118833-36 is not installed on the system.
Changes for package SUNWarc will not be applied to the system.
Package SUNWarcr from directory SUNWarcr in patch 118833-36 is not installed on the system.
Changes for package SUNWarcr will not be applied to the system.

...

Package FJSVpiclu from directory FJSVpiclu in patch 118833-36 is not installed on the system.
Changes for package FJSVpiclu will not be applied to the system.

Checking patches that you specified for installation.

Done!

Approved patches will be installed in this order:

118833-36

Executing prePatch script...
Checking installed patches...
Executing prepatch script...
Disabling kernel module unloading ...

Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...

Patch 118833-36 has been successfully installed.
See /var/sadm/patch/118833-36/log for details
Executing postpatch script...

Patch packages installed:

SUNW1394
SUNWatfsr
SUNWatfsu
SUNWaudd
SUNWbart
SUNWbtool
SUNWcakr
SUNWcar
SUNWckr
SUNWcnetr
SUNWcpcu
SUNWcsd
SUNWcsl
SUNWcslr
SUNWcsr
SUNWcsu
SUNWdtrc
SUNWdtrp
SUNWefc
SUNWesu
SUNWib
SUNWintgige
SUNWipfr
SUNWipfu
SUNWipoib
SUNWkey
SUNWkrbr
SUNWkrbu
SUNWkvm
SUNWmdb

```

SUNWmdbr
SUNWmdr
SUNWmdu
SUNWnfscr
SUNWnfscr
SUNWnfscu
SUNWnisu
SUNWopenssl-commands
SUNWopenssl-libraries
SUNWpcu
SUNWpd
SUNWpiclu
SUNWpsu
SUNWqos
SUNWrcmdc
SUNWroute
SUNWrpcib
SUNWsacom
SUNWses
SUNWsmapi
SUNWssad
SUNWtavor
SUNWtoo
SUNWudapltr
SUNWudapltu
SUNWuedg
SUNWugen
SUNWuksp
SUNWuprl
SUNWusb
SUNWusbs
SUNWwbsup
SUNWxcu4
SUNWxge

```

```

Completed installation of core extra packages
Start core hardening
Changing EEPROM settings..
Enable recording of failed login attempts
    Dump content: kernel pages
    Dump device: /dev/dsk/c1t0d0s3 (swap)
Savecore directory: /var/crash/sh-jingan
    Savecore enabled: yes
Completed core hardening
CORE CD installation completed
Ejecting CORE CD...
Rebooting ..

```

Step 6 If you are installing on a Sparc-based platform, perform the following steps. Otherwise, proceed to Step 7.

- a. Change to the root directory by entering the following command and pressing **Enter**:

```
# cd /
```
- b. Unmount the cdrom directory from the CD-ROM drive by entering the following command and pressing **Enter**:

```
# umount /cdrom
```
- c. Eject the CD from the CD-ROM by entering the following command and pressing **Enter**:

```
# eject /dev/dsk/c0t0d0s0
```

Step 7 Remove the CD from the CD-ROM drive.

This completes the installation of platform-specific data. Proceed to the “[Loading the Sun Solaris 10 Operating Environment](#)” section on page 2-72.

Loading the Sun Solaris 10 Operating Environment

This section contains the procedures used to load the software packages that create the Sun Solaris 10 operating environment on your host platforms. [Table 2-2](#) lists the order in which the software packages should be loaded onto your system, broken down by platform type.

The currently deployed Solaris 10 patch set is release 3.0(6) which is available on Cisco.com.

- For Sparc-based platforms, go to
<http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-sol10-sparc>
- For Opteron-based platforms, go to
<http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-sol10-opteron>

Table 2-2 Sun Solaris 10 Operating Environment Package Installation Order

| Products | | | | |
|---------------------------|-----------|------------|--|---|
| Cisco PGW 2200 Softswitch | Cisco HSI | Cisco BAMS | Sparc-based Platforms | Opteron-based Platforms |
| X | X | X | Installing the Sparc-based Solaris 10 Patches Package (CSCOh022) | Installing the Opteron-based Solaris 10 Patches Package (CSCOh032) |
| X | X | — | Configuring Disk Drives—One of the following: <ul style="list-style-type: none"> Systems with 36 GB, 73 GB, and 146 GB disk drives—Installing the Solstice DiskSuite (CSCOh023) | Configuring Disk Drives—One of the following: <ul style="list-style-type: none"> Systems with 36 GB, 73 GB, or 146 GB disk drives—Installing the Solstice DiskSuite (CSCOh023) |
| X | — | — | <ul style="list-style-type: none"> Systems with 18 GB disk drives—Installing the Log and Spool File Systems (CSCOh024) | |
| — | — | X | <ul style="list-style-type: none"> Cisco BAMS platforms—Installing Cisco BAMS Archive Partition (CSCOh027) | |
| X | X | X | Installing the Sparc-based Communications and Alarm Software Package (CSCOh026) | Installing the Opteron-based Communications Software Package (CSCOh036) |
| X | X | X | Installing the Verification Test Suite Script Package (CSCOh021) | Installing the Verification Test Suite Script Package (CSCOh021) |

Installing the Sparc-based Solaris 10 Patches Package (CSCOh022)

To install the Sparc-based Solaris 10 Operating System Patches package (CSCOh022):

- Step 1** If you are using the CD-ROM, load the Cisco Solaris 10 Operating Environment CD into the CD-ROM drive. Enter the following command

```
# pkgadd -d /cdrom/cdrom0/CSCOh022.pkg
```

Text similar to the following is displayed:

The following packages are available:

```
1  CSCOh022      Media Gateway Controller Solaris 10 Patch Cluster
                   (sparc) 3.0(6)
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:



Note You can also download the Sparc-based Solaris 10 operating system patches package (CSCOh022) from Cisco.com. For example, download the CSCOh022 package to the /opt/SW folder on the Sparc-based platform and use the command, pkgadd -d /opt/SW/CSCOh022.pkg.

- Step 2** Press **Enter** to select the default value. Text similar to the following is displayed:

```
Processing package instance <CSCOh022> from </var/tmp/CSCOh022.pkg>
```

```
Media Gateway Controller Solaris 10 Patch Cluster(sparc) 3.0(6)
Cisco Systems, Inc.
## Executing checkinstall script.
CSCOh022 checkinstall log file at /var/tmp/CSCOh022.checkinstall.log
Platform is SUNW,Sun-Fire-V210
Using </opt/sun_install> as the package base directory.
## Processing package information.
## Processing system information.
    1 package pathname is already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
```

The following files are already installed on the system and are being used by another package:

```
* /opt/sun_install <attribute change only>
```

```
* - conflict with a file which does not belong to any package.
```

```
Do you want to install these conflicting files [y,n,?,q]
```

- Step 3** Type **y** and press **Enter** to continue. Text similar to the following is displayed:

```
## Checking for setuid/setgid programs.
```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

```
Do you want to continue with the installation of <CSCOh022> [y,n,?]
```

- Step 4** Type **y** and press **Enter** to continue. Text similar to the following is displayed:

```
Installing Media Gateway Controller Solaris 10 Patch Cluster as <CSCOh022>
```

The system lists the patches that it will install. This list will vary over time. A screen similar to the following is displayed:

```
...
!!
!! You must now change directories to /opt/sun_install and
!! run the installPatches.sh script as root.
!!
```

Installation of <CSCOh022> was successful.

Step 5 Change directory to /opt/sun_install and run the installPatches script by entering the following commands:

```
# cd /opt/sun_install
# ./installPatches.sh
```



Note During the installation of the Solaris 10 patch cluster, some patches might fail with return codes 2, 8, or 35. This is normal and does not indicate a problem with the installation. The following is an explanation of these error codes:

- 2**—Attempting to apply a patch that is already applied.
- 8**—Attempting to patch a package that is not installed.
- 35**—A later version of the patch has already been installed.

Text similar to the following is displayed:

```
You are running as root - Good...

*** InstallPatches10 begins Wed Sep 10 01:16:25 EDT 2008 ***

VERSION='3.0(6)'

Platform is SUNW,Sun-Fire-V210
Install Solaris 10 patches from set 1 ...
Changed to /var/tmp directory
Now installing each patch from the patch cluster. There are a large
number of these patches, and the install could take an hour or longer
to complete. Please be patient. You can follow the progress of the
install in the following log: /opt/sun_install/installPatches10.log
At least one patch failed to install. This may or may
not indicate a problem. Please look at the log file
after the rest of the patches are applied
Install Solaris 10 patches from set 2 ...
Changed to /var/tmp directory
*** InstallPatches10 ends Wed Sep 10 01:34:40 EDT 2008 ***
*****
* It is necessary to reboot this machine *
* for these patches to be incorporated *
* the operating system. Enter the following *
* command and press Enter: reboot -- -r *
*****
```

Step 6 Type the following command and press **Enter** to reboot the target machine.

```
#reboot -- -r
```


**Note**

If you used the CD-ROM drive to load the Solaris 10 patch cluster, eject the CD prior to rebooting.

This completes the procedures for installing the Solaris 10 patches for Sparc-based platforms. Go to [Table 2-2 on page 2-72](#) if you want to continue with the list for package installation. If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request” section on page x](#).

Installing the Opteron-based Solaris 10 Patches Package (CSCOh032)

**Note**

If you install CSCOh032 release 3.0(6) on top of release 3.0(5), run the CSCOh032 installation script once and reboot the system. See the following installation procedure. If you do NOT install CSCOh032 release 3.0(6) on top of release 3.0(5), you need to run the CSCOh032 installation script twice. First run the CSCOh032 installation script, then reboot the system. Then run the CSCOh032 installation script again and reboot the system. After the second reboot is complete, use the `uname -a` command to verify the patch level. If the patch level is 127128-11, CSCOh032 is successfully installed.

To install the Opteron-based Solaris 10 Operating System Patches package (CSCOh032):

Step 1

If you are using the CD-ROM, load the Cisco Solaris 10 Operating Environment CD into the CD-ROM drive. Enter the following command:

```
# pkgadd -d /cdrom/cdrom0/CSCOh032.pkg
```

Text similar to the following is displayed:

The following packages are available:

```
1 CSCOh032      Media Gateway Controller Solaris 10 Patch Cluster
                  (i386) 3.0(6)
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:

**Note**

You can also download the Opteron-based Solaris 10 operating system patches package (CSCOh032) from Cisco.com. For example, download the CSCOh032 package to the `/opt/SW` folder on the Opteron-based platform and use the command, `pkgadd -d /opt/SW/CSCOh032.pkg`.

Step 2

Press **Enter** to select the default value. Text similar to the following is displayed:

```
Processing package instance <CSCOh032> from </var/tmp/CSCOh032.pkg>
```

```
Media Gateway Controller PGW Specific Solaris 10 packages(i386) 3.0(6)
Cisco Systems, Inc.
```

```
## Executing checkinstall script.
```

```
CSCOh032 checkinstall log file at /var/tmp/CSCOh032.checkinstall.log
```

```
Platform is i86pc
```

```
This machine is running Solaris 5.10
```

```

Using </opt/sun_install> as the package base directory.
## Processing package information.
## Processing system information.
    10 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <CSCOh032> [y,n,?]

```

Step 3 Type **y** and press **Enter** to continue. Text similar to the following is displayed:

```
Installing Media Gateway Controller Solaris 10 Patch Cluster as <CSCOh0032>
```

The system lists the patches that it will install. This list varies over time. Text similar to the following is displayed:

```

...
!!
!! You must now change directories to /opt/sun_install and
!! run the installPatches.sh script as root.
!!

```

```
Installation of <CSCOh032> was successful.
```

Step 4 Change directory to `/opt/sun_install` and run the `installPatches` script by entering the following commands:

```

# cd /opt/sun_install
# ./installPatches.sh

```



Note During the installation of the Solaris 10 patch cluster, some patches might fail with return codes 1, 2, 8, and 35. This is normal and does not indicate a problem with the installation. The following is an explanation of these error codes:

- 1**—The patch has been installed before.
- 2**—Attempting to apply a patch that is already applied.
- 8**—Attempting to patch a package that is not installed.
- 35**—A later version of the patch has already been installed.

Text similar to the following is displayed:

```

You are running as root - Good...

*** InstallPatches10 begins Tue Jul  8 11:14:25 GMT+8 2008 ***

VERSION='3.0(6)'

Platform is i86pc
Install Solaris 10 patches from set 1 ...
Changed to /var/tmp directory
Now installing each patch from the patch cluster. There are a large
number of these patches, and the install could take an hour or longer
to complete. Please be patient. You can follow the progress of the
install in the following log: /opt/sun_install/installPatches10.log
At least one patch failed to install. This may or may

```

```

not indicate a problem. Please look at the log file
after the rest of the patches are applied
Install Solaris 10 patches from set 2 ...
Changed to /var/tmp directory
*** InstallPatches10 ends Tue Jul  8 11:14:41 GMT+8 2008 ***
*****
*   It is necessary to reboot this machine   *
*   for these patches to be incorporated    *
*   the operating system. Enter the following *
*   command and press Enter:  reboot -- -r  *
*****

```

Step 5 Type the following command and press **Enter** to reboot the target machine.

```
#reboot -- -r
```



Note If you used the CD-ROM drive to load the Solaris 10 patch cluster, eject the CD prior to rebooting.



Note If you have installed the Solaris DiskSuite package (CSCOh023) on your system, the messages below are displayed during system boot. They are normal Solaris DiskSuite startup messages and do not indicate any problem with your system.

```

WARNING force load of misc /md-trans failed
WARNING force load of misc /md-raid failed
WARNING force load of misc /md-hotspares failed
WARNING force load of misc /md-sp failed

```

This completes the procedures for installing the Solaris 10 patches for Opteron-based platforms. Go to [Table 2-2 on page 2-72](#) if you want to continue with the list for package installation. If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request” section on page x](#).

Installing the Solstice DiskSuite (CSCOh023)

The Sun Solstice DiskSuite program enables you to use the second disk drive as a mirror of the first to increase the availability of the system. You can install the DiskSuite program by running the scripts described below. The machine reboots several times during the installation process. The scripts minimize the possibility of running the scripts in the wrong order. However, you should ensure that the program is properly installed and take reasonable precautions to run the scripts correctly.



Note You must log in as **root** to run the following DiskSuite installation script.



Note For Sun Fire X4600 and Sun Netra X4200 M2 platforms, do not change the default hard disk boot order in the BIOS settings. If the primary disk is changed from the default of c3t0d0, the DiskSuite installation fails.

- Step 1** Load the Cisco Solaris 10 Operating Environment CD into the CD-ROM drive. Enter the following command to install the DiskSuite installation scripts:

```
# pkgadd -d /cdrom/cdrom0/CSCOh023.pkg
```

Text similar to the following is displayed.

The following packages are available:

```
1  CSCOh023      Media Gateway Controller Solaris 10 DiskSuite
                   (sparc,i386) 3.0(6)
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:



Note You can also download the Solaris 10 DiskSuite package (CSCOh023) from Cisco.com. For example, download the CSCOh023 package to the /opt/SW folder on the platform and use the command, `pkgadd -d /opt/SW/CSCOh023.pkg`. Make sure you download the platform-specific package for your platform (Sparc-based or Opteron-based).

- Step 2** Press **Enter** to accept the default answer **all**. Text similar to the following is displayed:

```
Processing package instance <CSCOh023> from </var/tmp/CSCOh023.pkg>
```

```
Media Gateway Controller Solaris 10 DiskSuite(sparc,i386) 3.0(6)
Cisco Systems, Inc.
## Executing checkinstall script.
CSCOh023 checkinstall log file at /var/tmp/CSCOh023.checkinstall.log
Platform is SUNW,Sun-Fire-V210
This machine is running Solaris 5.10
Using </opt/sun_install> as the package base directory.
## Processing package information.
## Processing system information.
    2 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.
```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <CSCOh023> [y,n,?]

- Step 3** Enter **y** and press **Enter** to continue with the installation.

```
Installing Media Gateway Controller Solaris 10 DiskSuite as <CSCOh023>
```

```
## Executing preinstall script.
```

```
No PGW software found - this package can be installed
## Installing part 1 of 1.
/opt/sun_install/DiskSuite/admin.file
/opt/sun_install/DiskSuite/install_disksuite_1.sh
/opt/sun_install/DiskSuite/install_disksuite_2.sh
/opt/sun_install/DiskSuite/query_2nd_disk.cmd
/opt/sun_install/DiskSuite/rm_disksuite_1.sh
/opt/sun_install/DiskSuite/rm_disksuite_2.sh
[ verifying class <none> ]
## Executing postinstall script.
```

```
!!
!! You must now change directories to
```

```
!! /opt/sun_install/DiskSuite and run the
!! install_disksuite_1.sh script as root.
!!
```

Installation of <CSC0h023> was successful.

Step 4 Change directories. Enter the following command:

```
cd /opt/sun_install/DiskSuite
```

Step 5 Run the first script. Enter the following command:

```
./install_disksuite_1.sh
```

Text similar to the following is displayed:

```
You are running as root - Good...
Output will be logged in /opt/sun_install/DiskSuite/DiskSuite_1.log
```

This script installs Disk Suite on an PGW system.
It assumes that Solaris 10 is installed and the disks
are correctly formatted and ready to go.

```
**** IMPORTANT NOTE ****
In order to install DiskSuite, you MUST HAVE allocated
an unassigned, 15-30Mb disk partition in disk slice 4
of your primary disk. IF THIS PARTITION DOES NOT EXIST
YOUR DISKSUITE INSTALLATION WILL FAIL, and IT MAY
CORRUPT YOUR DISK!
```

I will now run a command which will show you the
current disk partitions. You can see the number of
sectors allocated in the column marked Sector Count

If you do not see a line which shows that partition 4
is allocated DO NOT CONTINUE WITH THIS INSTALLATION!

You can see the number of sectors allocated in the
column marked Sector Count. Sectors may vary in size
from 512 bytes to 4096 bytes and perhaps even larger
Warning: Current Disk has mounted partitions.

```
/dev/dsk/clt0d0s0 is currently mounted on /. Please see umount(1M).
/dev/dsk/clt0d0s1 is currently mounted on /var. Please see umount(1M).
/dev/dsk/clt0d0s3 is currently used by swap. Please see swap(1M).
/dev/dsk/clt0d0s5 is currently mounted on /opt. Please see umount(1M).
```

Using Disk Controller cl

If this is not the correct controller, please
exit this script and contact tech support

Here is your current disk partition setup. Look
for partition 4

```
* /dev/dsk/clt0d0s0 partition map
*
* Dimensions:
*   512 bytes/sector
*   424 sectors/track
*   24 tracks/cylinder
* 10176 sectors/cylinder
* 14089 cylinders
```

```

*   14087 accessible cylinders
*
* Flags:
*   1: unmountable
*  10: read-only
*
*
* Partition  Tag  Flags      First      Sector      Last
* Partition  Tag  Flags      Sector      Count      Sector  Mount Directory
    0         2    00      8201856    4100928    12302783  /
    1         7    00     12302784    10247232    22550015  /var
    2         5    00              0  143349312  143349311
    3         3    01              0    8201856    8201855
    4         0    00     22550016      50880    22600895
    5         0    00     22600896  116647488  139248383  /opt
    6         0    00    139248384    4100928  143349311

```

Do you want to continue? (y/n) [N]

Step 6 Type **y** and press **Enter** to continue the installation. Text similar to the following is displayed:

Searching for disks...done

AVAILABLE DISK SELECTIONS:

- 0. clt0d0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>
/pci@1c,600000/scsi@2/sd@0,0
- 1. clt1d0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>
/pci@1c,600000/scsi@2/sd@1,0

Specify disk (enter its number): selecting clt0d0

[disk formatted]

Warning: Current Disk has mounted partitions.

/dev/dsk/clt0d0s0 is currently mounted on /. Please see umount(1M).

/dev/dsk/clt0d0s1 is currently mounted on /var. Please see umount(1M).

/dev/dsk/clt0d0s3 is currently used by swap. Please see swap(1M).

/dev/dsk/clt0d0s5 is currently mounted on /opt. Please see umount(1M).

FORMAT MENU:

- disk - select a disk
- type - select (define) a disk type
- partition - select (define) a partition table
- current - describe the current disk
- format - format and analyze the disk
- repair - repair a defective sector
- label - write label to the disk
- analyze - surface analysis
- defect - defect list management
- backup - search for backup labels
- verify - read and display labels
- save - save new disk/partition definitions
- inquiry - show vendor, product and revision
- volname - set 8-character volume name
- !<cmd> - execute <cmd>, then return
- quit

format>

PARTITION MENU:

- 0 - change `0' partition
- 1 - change `1' partition
- 2 - change `2' partition
- 3 - change `3' partition
- 4 - change `4' partition
- 5 - change `5' partition

```

6      - change `6' partition
7      - change `7' partition
select - select a predefined table
modify - modify a predefined partition table
name   - name the current table
print  - display the current table
label  - write partition map and label to the disk
!<cmd> - execute <cmd>, then return
quit
partition> Enter table name (remember quotes):
partition>

FORMAT MENU:
disk      - select a disk
type      - select (define) a disk type
partition - select (define) a partition table
current   - describe the current disk
format    - format and analyze the disk
fdisk     - run the fdisk program
repair    - repair a defective sector
label     - write label to the disk
analyze   - surface analysis
defect    - defect list management
backup    - search for backup labels
verify    - read and display labels
save      - save new disk/partition definitions
inquiry   - show vendor, product and revision
volname   - set 8-character volume name
!<cmd>    - execute <cmd>, then return
quit
format> Saving new disk and partition definitions
Enter file name["./format.dat"]: format> Searching for disks...done

```

```

AVAILABLE DISK SELECTIONS:
0. c1t0d0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>
   /pci@1c,600000/scsi@2/sd@0,0
1. c1t1d0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>
   /pci@1c,600000/scsi@2/sd@1,0
Specify disk (enter its number): selecting c1t1d0
[disk formatted]

```

```

FORMAT MENU:
disk      - select a disk
type      - select (define) a disk type
partition - select (define) a partition table
current   - describe the current disk
format    - format and analyze the disk
fdisk     - run the fdisk program
repair    - repair a defective sector
label     - write label to the disk
analyze   - surface analysis
defect    - defect list management
backup    - search for backup labels
verify    - read and display labels
save      - save new disk/partition definitions
inquiry   - show vendor, product and revision
volname   - set 8-character volume name
!<cmd>    - execute <cmd>, then return
quit
format>

```

```

PARTITION MENU:

```

```

0      - change `0' partition
1      - change `1' partition
2      - change `2' partition
3      - change `3' partition
4      - change `4' partition
5      - change `5' partition
6      - change `6' partition
7      - change `7' partition
select - select a predefined table
modify - modify a predefined partition table
name   - name the current table
print  - display the current table
label  - write partition map and label to the disk
!<cmd> - execute <cmd>, then return
quit
partition> 0. CISCO
1. original
Specify table (enter its number)[1]:
partition> Current partition table (CISCO):
Total disk cylinders available: 14087 + 2 (reserved cylinders)

Part      Tag      Flag      Cylinders      Size      Blocks
0         root      wm        806 - 1208      1.96GB    (403/0/0)    4100928
1         var       wm        1209 - 2215      4.89GB    (1007/0/0)   10247232
2        backup    wm          0 - 14086      68.35GB   (14087/0/0)  143349312
3         swap     wu          0 - 805        3.91GB    (806/0/0)    8201856
4 unassigned     wm        2216 - 2220      24.84MB   (5/0/0)       50880
5 unassigned     wm        2221 - 13683     55.62GB   (11463/0/0)  116647488
6 unassigned     wm       13684 - 14086      1.96GB    (403/0/0)    4100928
7 unassigned     wm          0          0          0      (0/0/0)         0

partition> Ready to label disk, continue?
partition>

FORMAT MENU:
disk      - select a disk
type      - select (define) a disk type
partition - select (define) a partition table
current   - describe the current disk
format    - format and analyze the disk
fdisk     - run the fdisk program
repair    - repair a defective sector
label     - write label to the disk
analyze   - surface analysis
defect    - defect list management
backup    - search for backup labels
verify    - read and display labels
save      - save new disk/partition definitions
inquiry   - show vendor, product and revision
volname   - set 8-character volume name
!<cmd>    - execute <cmd>, then return
quit
format> Finished disk partitioning...
metadb: waiting on /etc/lvm/lock
d1: Concat/Stripe is setup
d2: Concat/Stripe is setup
d4: Concat/Stripe is setup
d5: Concat/Stripe is setup
d7: Concat/Stripe is setup
d8: Concat/Stripe is setup
d10: Concat/Stripe is setup
d11: Concat/Stripe is setup
d13: Concat/Stripe is setup
d14: Concat/Stripe is setup

```



```
d3: Mirror is setup
d6: Mirror is setup
d9: Mirror is setup
d12: Mirror is setup
d15: Mirror is setup
```

The machine will now reboot.

Wait for the system to come up. Then log in as root,
cd /opt/sun_install/DiskSuite and continue by
executing the script install_disksuite_2.sh

Press the ENTER key to continue:

Step 7 Press **Enter** to reboot your system.

Step 8 Once the system has completed its reboot, log in as **root** and change directories to /opt/sun_install/DiskSuite. Enter the following command:

```
cd /opt/sun_install/DiskSuite
```

Step 9 Run the second script. Enter the following command:

```
./install_disksuite_2.sh
```

Text similar to the following is displayed:

```
You are running as root - Good...
Output will be logged in /opt/sun_install/DiskSuite/DiskSuite_2.log
```

```
This is part 2 of the script that installs
Disk Suite on an PGW system.
It assumes that Solaris 10 is installed
```

```
You should have already run install_disksuite_1.sh
which installs and configures the disks
```

```
This script attaches the second disk and starts
the disk replication process
```

```
Do you want to continue? (y/n) [N] y
```

Step 10 Type **y** and press **Enter** to continue the installation. Text similar to the following is displayed:

```
/dev/dsk/clt0d0s0 is part of SVM volume stripe:d1. Please see metaclear(1M).
/dev/dsk/clt0d0s1 is part of SVM volume stripe:d4. Please see metaclear(1M).
/dev/dsk/clt0d0s3 is part of SVM volume stripe:d7. Please see metaclear(1M).
/dev/dsk/clt0d0s4 contains an SVM mdb. Please see metadb(1M).
/dev/dsk/clt0d0s5 is part of SVM volume stripe:d10. Please see metaclear(1M).
/dev/dsk/clt0d0s6 is part of SVM volume stripe:d13. Please see metaclear(1M).
/dev/dsk/clt1d0s0 is part of SVM volume stripe:d2. Please see metaclear(1M).
/dev/dsk/clt1d0s1 is part of SVM volume stripe:d5. Please see metaclear(1M).
/dev/dsk/clt1d0s3 is part of SVM volume stripe:d8. Please see metaclear(1M).
/dev/dsk/clt1d0s4 contains an SVM mdb. Please see metadb(1M).
/dev/dsk/clt1d0s5 is part of SVM volume stripe:d11. Please see metaclear(1M).
/dev/dsk/clt1d0s6 is part of SVM volume stripe:d14. Please see metaclear(1M).
d3: submirror d2 is attached
d6: submirror d5 is attached
d9: submirror d8 is attached
d12: submirror d11 is attached
d15: submirror d14 is attached
Disk Suite is now configured and will start to
```

mirror to the second disk. It will take some time for the disk to be completely mirrored. Depending on the size of the disk, it may take up to several hours

The system will repeatedly execute the command:
/usr/sbin/metastat |grep done

When there is no output from this command, the replication will be complete and this script will terminate

At that time, it will be safe to reboot the machine
Resync in progress: 0 % done Resync in progress: 0 % done Resync in progress: 0
% done Resync in progress: 0 % done Resync in progress: 0 % done
Resync in progress: 0 % done Resync in progress: 0 % done Resync in progress: 0
% done Resync in progress: 2 % done Resync in progress: 0 % done
Resync in progress: 0 % done Resync in progress: 1 % done Resync in progress: 1
% done Resync in progress: 4 % done Resync in progress: 1 % done



Note The system continues to issue these re-synchronization messages until the replication is complete. Once the replication is complete, the system returns a prompt.



Note This portion of the installation is time-intensive. The amount of time required to complete the replication is dependent upon the size of the disk drives in your host. It may take several hours.

Resync in progress: 94 % done
Resync in progress: 96 % done
Resync in progress: 98 % done

The Disk Suite installation is now complete

Press the ENTER key to continue:

Step 11 Press **Enter** to continue the installation. Text similar to the following is displayed:

The following procedure should be used to add an alias in the boot rom so you can boot off of the secondary disk if necessary

Get the information from the system on the second disk
prtconf -vp |grep pci |grep disk1

NOTE: disk1 is a system maintained standard for the system's second hard disk. If the prtconf command returns this information, it can be used to boot the second disk without any additional changes

To create an alias name other than disk1 for the second boot disk in the NVRAM, use the information from the prtconf command (above)

```
# eeprom nvramrc='devalias backup_root /pci@1f,0/pci@1/scsi@8/disk@1,0'
```

Check the alias

```
eeprom |grep nvramrc
#use-nvramrc?=true
```

```
nvrnrc=devalias backup_root /pci@1f,0/pci@1/scsi@8/disk@1,0
```

Then bring the machine down to the boot prompt

```
# /usr/sbin/shutdown -g0 -y -i0
.... system shuts down....
```

```
ok boot backup_root
```

The machine should reboot from the second disk. The following text will be found in the boot output. This ensures that the machine was working from the second drive:

a) Executing last command: boot backup_root

b) Boot device: /pci@1f,0/pci@1/scsi@8/disk@1,0 File and args:

The boot device listed should match the output from the
nvrnrc= output from above

Step 12 If you want to set up your system to be able to reboot from the second disk, proceed to the [“Rebooting from the Mirrored \(Secondary\) Disk on Sparc-based Platforms”](#) section on page 2-85 or the [“Rebooting from the Mirrored \(Secondary\) Disk on Opteron-based Platforms”](#) section on page 2-87. Otherwise, proceed to Step 15.

Step 13 Type the following command and press **Enter** to reboot your system.

```
#/usr/sbin/shutdown -g0 -y -i6
```

The DiskSuite installation is now complete. If you want to configure your system to reboot from the mirrored disk, go to the [“Rebooting from the Mirrored \(Secondary\) Disk on Sparc-based Platforms”](#) section on page 2-85 or the [“Rebooting from the Mirrored \(Secondary\) Disk on Opteron-based Platforms”](#) section on page 2-87. If you want to return to the list for package installation, go to [Table 2-2 on page 2-72](#).

Rebooting from the Mirrored (Secondary) Disk on Sparc-based Platforms



Caution

Rebooting from the mirrored (secondary) disk is normally done only after a catastrophic failure of the primary disk.

Perform the following procedure to add an alias in the boot ROM so you can boot from the secondary disk, if necessary.

Step 1 Get the information from the system on the second disk that you will boot from. Type the following command and press **Enter**:

```
# prtconf -vp | grep pci | grep disk1
```

Text similar to the following is displayed:

```
disk1: `pci@1f,0/pci@1/scsi@8/disk1,0`
```



Note Disk1 is a system-maintained standard for the system's second hard disk.

- a. If the **prtconf** command returns the above information, you can use it to boot the second disk without any additional changes. Proceed to [Step 4](#).
- b. If you do not wish to use the above default information, create an alias name other than disk1 for the second boot disk in the NVRAM by using the information from the **prtconf** command (above).

```
# eeprom nvramrc='devalias backup_root /pci@1f,0/pci@1/scsi@8/disk@1,0'
```

Step 2 Check the alias you created by typing the following commands and pressing **Enter**:

```
eeprom |grep nvramrc
```

Text similar to the following is displayed:

```
use-nvramrc?=true
nvramrc=devalias backup_root /pci@1f,0/pci@1/scsi@8/disk@1,0
```



Note In the steps that follow, wherever you see “disk1” replace it with the alias you configured above.

Step 3 *Before shutting down the system, check the progress of the mirroring to make sure that replication is complete.* Type the following the command to check the progress of the mirroring. An **Okay** response means that disk mirroring is complete.

```
/usr/sbin/metastat
```



Warning **DO NOT REBOOT** until the replication is complete and the mirrors are in the **Okay** state.

Step 4 When the replication is complete, bring the machine down to the boot prompt. Type the following command and press **Enter**:

```
# /usr/sbin/shutdown -g0 -y -i0
```

Text similar to the following is displayed:

```
The system is coming down. Please wait.
System services are now being stopped.
.
.
.
The system is down.
.
.
.
Program terminated
ok
```

Step 5 In OK mode, enter the following command and press Enter:

```
ok boot disk1
```

Text similar to the following is displayed:

```
Res
LOM event: +0h5m53s host resetting
.
.
```

```
.
Executing last command: boot disk1
Boot device: /pci@1f,0/pci@1/scsi@8/disk@1,0 File and args:
SunOS Release 5.10 Version Generic_108528-13 64-bit
Copyright 1983-2004 Sun Microsystems, Inc. All rights reserved.
```

The machine should reboot from the second disk.

- Step 6** Verify that the following text is displayed in the boot output (see the output in [Step 4](#), above). This ensures that the machine was working from the second drive:

```
Executing last command: boot disk1
Boot device: /pci@1f,0/pci@1/scsi@8/disk@1,0 File and args:
```



Note If you have installed the Solaris DiskSuite package (CSCOh023) on your system, the messages below are displayed during system boot. They are normal Solaris DiskSuite startup messages and do not indicate any problem with your system.

```
WARNING force load of misc /md-trans failed
WARNING force load of misc /md-raid failed
WARNING force load of misc /md-hotspares failed
WARNING force load of misc /md-sp failed
```

- Step 7** The boot device listed should match the output from the "nvramrc=" line in [Step 2](#).

This completes the procedures for rebooting from the mirrored (secondary) disk on Sparc-based platforms. If you want to return to the list for package installation, go to [Table 2-2 on page 2-72](#).

Rebooting from the Mirrored (Secondary) Disk on Opteron-based Platforms



Caution

Rebooting from the mirrored (secondary) disk is normally done only after a catastrophic failure of the primary disk.

Perform the following procedure to reboot from the mirrored (secondary) disk on Opteron-based platforms.

- Step 1** Check the file /boot/grub/menu.lst to make sure that the section for **alternate boot** exists in the file.

That section is similar to the following:

```
title alternate boot
root (hd1,0,a)
kernel /platform/i86pc/multiboot
module /platform/i86pc/boot_archive
```

- Step 2** *Before shutting down the system, check the progress of the mirroring to make sure that replication is complete.* Type the following the command to check the progress of the mirroring. An **Okay** response means that disk mirroring is complete. At the end of the system output, you see two devices whose Reloc are shown as **Yes**.

```
/usr/sbin/metastat
```

Text similar to the following is displayed:

```

d12: Mirror
  Submirror 0: d10
    State: Okay
  Submirror 1: d11
    State: Okay
  Pass: 1
  Read option: roundrobin (default)
  Write option: parallel (default)
  Size: 116599770 blocks (55 GB)

...

d14: Submirror of d15
  State: Okay
  Size: 4096575 blocks (2.0 GB)
  Stripe 0:
    Device      Start Block  Dbase      State Reloc Hot Spare
    c3t3d0s6      0          No         Okay   Yes

Device Relocation Information:
Device  Reloc  Device ID
c3t3d0   Yes   id1,sd@n500000e01861aae0
c3t2d0   Yes   id1,sd@n500000e01860a690

```



Warning **DO NOT REBOOT** until the replication is complete and the mirrors are in the **Okay** state.

Step 3 When the replication is complete, bring the machine down to the boot prompt. Type the following command and press **Enter**:

```
# /usr/sbin/shutdown -g0 -y -i6
```

Text similar to the following is displayed:

```

Shutdown started.      Thu Aug 14 12:18:21 CDT 2008

Changing to init state 6 - please wait
Broadcast Message from root (pts/1) on sh-agrove Thu Aug 14 12:18:21...
THE SYSTEM sh-agrove IS BEING SHUT DOWN NOW ! ! !
Log off now or risk your files being damaged

```

Step 4 Choose **alternate boot** in the GRUB menu and press **Enter**.

This completes the procedures for rebooting from the mirrored (secondary) disk on Opteron-based platforms. If you want to return to the list for package installation, go to [Table 2-2 on page 2-72](#).

Removing the Solstice DiskSuite



Note

This section applies to the Cisco PGW 2200 Softswitch Host running either the Cisco PGW 2200 Softswitch or HSI software. You must remove Cisco PGW 2200 Softswitch, HSI, or BAMS software before you remove the DiskSuite. The following procedure works only from platforms that have been mirrored by use of the procedure provided in the “[Installing the Solstice DiskSuite \(CSCOh023\)](#)” section on page 2-77.

This procedure un-mirrors the disk partitions and removes the DiskSuite application from the platform. Use this procedure if a system has DiskSuite installed and you no longer wish to use CSCOh024 to configure the second disk for the log and spool directories.

If the platform is configured with customer-specific information, *be sure to back up this information before the partitions are un-mirrored and DiskSuite is removed*. Consult the appropriate document, depending on the software installed.

Step 1 Log in as **root**. Use the **metastat** command to verify that the state of all the mirrors is **Okay**.

Step 2 Type the following commands to run the script and press **Enter**:

```
cd /opt/sun_install/DiskSuite
./rm_disksuite_1.sh
```

The **./rm_disksuite_1.sh** command detaches the mirrored disks and restores the original disk partition file in **/etc/vfstab**. The machine reboots after detaching the mirrored disks and restoring the original disk partition file.

Step 3 Log in as **root** and change directory to **/opt/sun_install/DiskSuite**. Enter the following command:

```
cd /opt/sun_install/DiskSuite
```

Step 4 Run the script **./rm_disksuite_2.sh**:

```
./rm_disksuite_2.sh
```

This script clears the disk mirrors and removes the DiskSuite software packages from the system.

Step 5 Enter the following command and press **Enter** to remove the package, CSCOh023:

```
pkgrm CSCOh023
```

Text similar to the following is displayed:

```
The following package is currently installed:
  CSCOh023  Media Gateway Controller Solaris 10 DiskSuite
           (sparc,i386) 3.0(6)

Do you want to remove this package? [y,n,?,q] y
...
Removal of <CSCOh023> was successful.
```

This completes the DiskSuite removal.

Installing the Log and Spool File Systems (CSCOh024)



Note

This section applies to a Cisco PGW 2200 Softswitch host with 18-GB disk drives running the Cisco PGW 2200 Softswitch software.



Note

If the DiskSuite software is installed and configured, you must first follow the procedure in the [“Removing the Solstice DiskSuite” section on page 2-88](#) to remove the DiskSuite software before configuring the second disk to be used for the log and spool file systems.

To determine whether DiskSuite is installed and configured, run the `/usr/sbin/metastat` command. If the command is found and it displays the status of mirrors, it indicates that DiskSuite is installed and configured.

**Note**

For the device names for each platform type, see [Table 2-1 on page 2-3 \(Device Names on Supported Host Platforms\)](#).

This procedure enables you to move the log and spool file system to the second disk drive to increase the capacity for log, alarm, measurement, and CDR files. This improves the performance of the host. If CSCOh024 is not installed, your system continues to store log and spool files on the first disk drive. The second disk is defined into two partitions:

- The first partition is the log partition and uses about 30 percent of the disk.
- The second partition is the spool partition that uses 50percent of the disk.

[Table 2-3](#) and [Table 2-4](#) shows sample partition tables for disks 1 and 2 for a Netra t 1400 with 18-GB disk drives.

Table 2-3 **18-GB Disk 1 Partition Table (Cisco PGW 2200 Softswitch with Log and Spool Package)**

| Cisco PGW 2200 Softswitch Host | | |
|--------------------------------|------------|-----------------|
| Slice No. | Slice Name | Slice Size (GB) |
| 0 | / | 1.00 |
| 1 | /var | 1.40 |
| 2 | | 0.00 |
| 3 | | 0.00 |
| 4 | | 0.00 |
| 5 | /opt | 12.00 |
| 6 | swap | 2.00 |
| 7 | | 0.00 |

**Note**

On disk drives larger than 18 GB, the swap space is 4 GB.

Table 2-4 **18-GB Disk 2 Partition Table (Cisco PGW 2200 Softswitch with Log and Spool Package)**

| Cisco PGW 2200 Softswitch Host | | |
|--------------------------------|-------------------------|-----------------|
| Slice No. | Slice Name | Slice Size (GB) |
| 0 | / | 1.00 |
| 1 | swap | 2.00 |
| 2 | | 0.00 |
| 3 | /opt/CiscoMGC/var/log | 5.70 |
| 4 | /opt/CiscoMGC/var/spool | 9.00 |

Table 2-4 18-GB Disk 2 Partition Table (Cisco PGW 2200 Softswitch with Log and Spool Package) (continued)

| | | |
|---|--|------|
| 5 | | 0.00 |
| 6 | | 0.00 |
| 7 | | 0.00 |

- Step 1** Load the Cisco Solaris 10 Operating Environment CD into the CD-ROM drive. From the /var/tmp directory of the target machine, install the Log And Spool Software by entering the following command:

```
# cd /var/tmp
# pkgadd -d /cdrom/cdrom0/CSCOh024.pkg
```

Text similar to the following is displayed:

The following packages are available:

```
1  CSCOh024      Media Gateway Controller Log and Spool package
                   (sparc) 3.0(6)
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:



Note You can also download the Sparc-based log and spool package (CSCOh024) from Cisco.com. For example, download the CSCOh024 package to the /opt/SW folder on the Sparc-based platform and use the command, pkgadd -d /opt/SW/CSCOh024.pkg.

- Step 2** Press **Enter** to accept the default answer **all**. Text similar to the following is displayed:

```
Processing package instance <CSCOh024 from </var/tmp/CSCOh024.pkg

Media Gateway Controller Log and Spool package(sparc) 3.0(6)
Cisco Systems, Inc.
## Executing checkinstall script.
CSCOh024 checkinstall log file at /var/tmp/CSCOh024.checkinstall.log
Platform is SUNW,Ultra-80
This machine is running Solaris 5.10

The selected base directory </opt/sun_install> must exist before
installation is attempted.

Do you want this directory created now [y,n,?,q] y
```

- Step 3** Answer **y** and press **Enter** to create the directory. Text similar to the following is displayed:

```
Using </opt/sun_install> as the package base directory.
## Processing package information.
## Processing system information.
1 package pathname is already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
The following files are already installed on the system and are being
used by another package:
* /opt/sun_install <attribute change only>

* - conflict with a file which does not belong to any package.

Do you want to install these conflicting files [y,n,?,q]
```

Step 4 Answer **y** and press **Enter** to install the files. Text similar to the following is displayed:

```
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <CSCOh024> [y,n,?]
```

Step 5 Type **y** and press **Enter** to continue. Text similar to the following is displayed:

```
Installing Media Gateway Controller Log and Spool package as <CSCOh024>

## Executing preinstall script.
Platform is SUNW,Ultra-80
This is a known platform

NOTICE: Architecture checks passed

## Installing part 1 of 1.
/opt/sun_install/format_log_spool_start.cmd
/opt/sun_install/install_log_spool
/opt/sun_install/query_2nd_disk.cmd
[ verifying class <none> ]
## Executing postinstall script.

!!
!! You must now change directories to /opt/sun_install/Log_Spool and
!! run the ./install_log_spool script as root.
!!
```

Step 6 Change directory to /opt/sun_install/Log_Spool and run the install_log_spool script.



Note You must first shut down the Cisco PGW 2200 Softswitch before running the install_log_spool script.

```
# cd /opt/sun_install/Log_Spool
# ./install_log_spool
```

Text similar to the following is displayed:

```
Platform is SUNW,Ultra-80
Searching for disks...done

FORMAT MENU:
  disk          - select a disk
  type          - select (define) a disk type
  partition     - select (define) a partition table
  current       - describe the current disk
  format        - format and analyze the disk
  repair        - repair a defective sector
  label         - write label to the disk
  analyze       - surface analysis
  defect        - defect list management
  backup        - search for backup labels
  verify        - read and display labels
  save          - save new disk/partition definitions
  volname       - set 8-character volume name
  !<cmd>        - execute <cmd>, then return
  quit
format> disk
```

```

AVAILABLE DISK SELECTIONS:
  0. c0t0d0 <SUN36G cyl 24620 alt 2 hd 27 sec 107>
    /pci@1f,4000/scsi@3/sd@0,0
  1. c0t1d0 <SUN36G cyl 24620 alt 2 hd 27 sec 107>
    /pci@1f,4000/scsi@3/sd@1,0
Specify disk (enter its number): 1
selecting c0t1d0
[disk formatted]
format> current
Current Disk = c0t1d0
<SUN36G cyl 24620 alt 2 hd 27 sec 107>
/pci@1f,4000/scsi@3/sd@1,0

format> q
2nd Disk device is:      c0t1d0
Disk type is:           SUN36G
Number of Cylinders :   24620

Enter absolute path of the desired mount point for the
log directory or press enter to accept
the default [/opt/CiscoMGC/var/log]:

```

Step 7 Press **Enter** to accept the default mount point for the log directory or change it if you plan on installing the Cisco PGW 2200 Softswitch software in a different location.

A screen similar to the following is displayed:

```

Log directory mount point is /opt/CiscoMGC/var/log

Enter absolute path of the desired mount point for the
spool directory or press enter to accept
the default [/opt/CiscoMGC/var/spool]:

```

Step 8 Press **Enter** to accept the default mount point for the spool directory or change it if you plan on installing the Cisco PGW 2200 Softswitch software in a different location.

A screen similar to the following is displayed:

```

Spool directory mount point is /opt/CiscoMGC/var/spool

Number of cylinders for log partition: 9848
  Start: 0
  Start: 9847

Number of cylinders for spool partition: 14772
  Start: 9848
  Start: 24619

Build partition table for c0t1d0 ...
Searching for disks...done
selecting c0t1d0
[disk formatted]

FORMAT MENU:
  disk      - select a disk
  type      - select (define) a disk type
  partition - select (define) a partition table
  current   - describe the current disk
  format    - format and analyze the disk
  repair    - repair a defective sector
  label     - write label to the disk

```

```

analyze      - surface analysis
defect       - defect list management
backup       - search for backup labels
verify       - read and display labels
save         - save new disk/partition definitions
inquiry      - show vendor, product and revision
volname      - set 8-character volume name
!<cmd>       - execute <cmd>, then return
quit
format> p

PARTITION MENU:
0      - change `0' partition
1      - change `1' partition
2      - change `2' partition
3      - change `3' partition
4      - change `4' partition
5      - change `5' partition
6      - change `6' partition
7      - change `7' partition
select   - select a predefined table
modify   - modify a predefined partition table
name     - name the current table
print    - display the current table
label    - write partition map and label to the disk
!<cmd>   - execute <cmd>, then return
quit

partition> 0
Part      Tag      Flag      Cylinders      Size      Blocks
0         root     wm        0 - 725        1.00GB    (726/0/0)    2097414

Enter partition id tag[root]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[0]: 0
Enter partition size[2097414b, 726c, 1024.13mb, 1.00gb]: 0c
partition> 1
Part      Tag      Flag      Cylinders      Size      Blocks
1         swap     wu        726 - 3629     4.00GB    (2904/0/0)    8389656

Enter partition id tag[swap]: unassigned
Enter partition permission flags[wu]: wm
Enter new starting cyl[726]: 0
Enter partition size[8389656b, 2904c, 4096.51mb, 4.00gb]: 0c
partition> 3
Part      Tag      Flag      Cylinders      Size      Blocks
3         unassigned  wm        0              0          (0/0/0)      0

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[0]: 0
Enter partition size[0b, 0c, 0.00mb, 0.00gb]: 0c
partition> 4
Part      Tag      Flag      Cylinders      Size      Blocks
4         unassigned  wm        3630 - 23156   26.90GB    (19527/0/0)  56413503

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[3630]: 0
Enter partition size[56413503b, 19527c, 27545.66mb, 26.90gb]: 0c
partition> 5
Part      Tag      Flag      Cylinders      Size      Blocks
5         var       wm        23157 - 23882   1.00GB    (726/0/0)    2097414

```

```

Enter partition id tag[var]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[23157]: 0
Enter partition size[2097414b, 726c, 1024.13mb, 1.00gb]: 0c
partition> 6

```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|-----|------|---------------|--------|-------------------|
| 6 | usr | wm | 23883 - 24608 | 1.00GB | (726/0/0) 2097414 |

```

Enter partition id tag[usr]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[23883]: 0
Enter partition size[2097414b, 726c, 1024.13mb, 1.00gb]: 0c
partition> 7

```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|------------|------|---------------|---------|----------------|
| 7 | unassigned | wm | 24609 - 24619 | 15.52MB | (11/0/0) 31779 |

```

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[24609]: 0
Enter partition size[31779b, 11c, 15.52mb, 0.02gb]: 0c
partition> 2

```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|--------|------|-----------|---------|----------------------|
| 2 | backup | wm | 0 - 24619 | 33.92GB | (24620/0/0) 71127180 |

```

Enter partition id tag[backup]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[0]: 0
Enter partition size[71127180b, 24620c, 34730.07mb, 33.92gb]: 24620c
partition> 3

```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|------------|------|-----------|------|-----------|
| 3 | unassigned | wm | 0 | 0 | (0/0/0) 0 |

```

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[0]: 0
Enter partition size[0b, 0c, 0.00mb, 0.00gb]: 9848c
partition> 4

```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|------------|------|-----------|------|-----------|
| 4 | unassigned | wm | 0 | 0 | (0/0/0) 0 |

```

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[0]: 9848
Enter partition size[0b, 0c, 0.00mb, 0.00gb]: 14772c
partition> p
Current partition table (unnamed):
Total disk cylinders available: 24620 + 2 (reserved cylinders)

```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|------------|------|--------------|---------|----------------------|
| 0 | unassigned | wm | 0 | 0 | (0/0/0) 0 |
| 1 | unassigned | wm | 0 | 0 | (0/0/0) 0 |
| 2 | unassigned | wm | 0 - 24619 | 33.92GB | (24620/0/0) 71127180 |
| 3 | unassigned | wm | 0 - 9847 | 13.57GB | (9848/0/0) 28450872 |
| 4 | unassigned | wm | 9848 - 24619 | 20.35GB | (14772/0/0) 42676308 |
| 5 | unassigned | wm | 0 | 0 | (0/0/0) 0 |
| 6 | unassigned | wm | 0 | 0 | (0/0/0) 0 |
| 7 | unassigned | wm | 0 | 0 | (0/0/0) 0 |

```

partition> l

partition> q

FORMAT MENU:

```

```

disk          - select a disk
type          - select (define) a disk type
partition    - select (define) a partition table
current      - describe the current disk
format       - format and analyze the disk
repair       - repair a defective sector
label        - write label to the disk
analyze      - surface analysis
defect       - defect list management
backup       - search for backup labels
verify       - read and display labels
save         - save new disk/partition definitions
inquiry      - show vendor, product and revision
volname      - set 8-character volume name
!<cmd>      - execute <cmd>, then return
quit
format> q

unknown disk type, assuming the speed is 10000 rpm
Build log filesystem at /dev/rdsk/c0t1d0s3 ...
mkfs -F ufs /dev/rdsk/c0t1d0s3 28450872 107 27 8192 1024 251 1 166 8192 t 0 -1 8 107
Cylinder groups must have a multiple of 16 cylinders with the given parameters
Rounded csize up to 256
/dev/rdsk/c0t1d0s3:      28450872 sectors in 9848 cylinders of 27 tracks, 107 sectors
                      13892.0MB in 308 cyl groups (32 c/g, 45.14MB/g, 5632 i/g)
super-block backups (for fsck -F ufs -o b=#) at:
   32, 92592, 185152, 277712, 370272, 462832, 555392, 647952, 740512, 833072,
   .
   .
   .

Build spool filesystem at /dev/rdsk/c0t1d0s4 ...
mkfs -F ufs /dev/rdsk/c0t1d0s4 42676308 107 27 8192 1024 251 1 166 8192 t 0 -1 8 107
Cylinder groups must have a multiple of 16 cylinders with the given parameters
Rounded csize up to 256
/dev/rdsk/c0t1d0s4:      42676308 sectors in 14772 cylinders of 27 tracks, 107 sectors
                      20838.0MB in 462 cyl groups (32 c/g, 45.14MB/g, 5632 i/g)
super-block backups (for fsck -F ufs -o b=#) at:
   32, 92592, 185152, 277712, 370272, 462832, 555392, 647952, 740512, 833072,
   .
   .
   .

Remove any existing entry in /etc/vfstab for c0t1d0s3 or c0t1d0s4

Adding entries to /etc/vfstab

Mounting /opt/CiscoMGC/var/log

Mounting /opt/CiscoMGC/var/spool
Success!!!

```

This completes the installation of the Log and Spool File system. Go to [Table 2-2 on page 2-72](#) if you want to continue with the list for package installation.

Uninstalling the Log and Spool File System

Use the following procedure if you need to remove the Log and Spool File system from the second disk. Contact Cisco TAC if you need assistance (see the [“Obtaining Documentation and Submitting a Service Request”](#) section in the [Preface](#)).

**Note**

You must be logged in as **root** to uninstall CSCOh024.

Step 1 Type the following command at the # prompt and press **Enter**:

```
cd /opt/sun_install/Log_Spool/  
./uninstall_log_spool
```

Text similar to the following is displayed:

```
You are running as root - Good...  
*** WARNING! LOG FILES WILL NOT BE SAVED ***  
Uninstalling this package typically means that the log &  
spool directories will be on the same disk as the rest of  
the software so there is less space available for those  
files. We will not save any existing log or spool files.
```

```
*** WARNING! LOG FILES WILL NOT BE SAVED ***  
However, they are not being deleted - the log files will  
still exist on the second (unmounted) disk drive  
It is possible to manually mount that disk and recover  
log files if necessary.
```

```
If you want to save log files before running this  
script, then exit and do so now  
Do you want to continue? (y/n) [N] y
```

Step 2 Type **y** and press **Enter** to remove CSCOh024. Text similar to the following is displayed:

```
Unmount /opt/CiscoMGC/var/log  
Unmount /opt/CiscoMGC/var/spool  
Update /etc/vfstab  
Remove old files...  
The Log/Spool software has been removed from the system  
Now you can remove the package with the command:  
pkgrm CSCOh024  
  
Done!
```

Step 3 Type the following command and press **Enter** to continue the removal of CSCOh024.

```
pkgrm CSCOh024
```

Step 4 Reboot your machine with the **-r** option. Type the following command and press **Enter**:

```
# reboot -- -r
```

**Note**

If you have installed the Solaris DiskSuite package (CSCOh023) on your system, the messages below are displayed during system boot. They are normal Solaris DiskSuite startup messages and do not indicate any problem with your system.

```
WARNING force load of misc /md-trans failed
WARNING force load of misc /md-raid failed
WARNING force load of misc /md-hotspares failed
WARNING force load of misc /md-sp failed
```

This completes the removal of the Log and Spool File system from the second disk.

Installing Cisco BAMS Archive Partition (CSCOh027)

The Cisco BAMS application cannot use the Solstice DiskSuite to configure the local disk drives. Use the procedure below to create an archive partition on the disk drives for Cisco BAMS systems.

**Note**

You must log in as **root** to run the following installation script.

- Step 1** Load the Cisco Solaris 10 Operating Environment CD into the CD-ROM drive. Enter the following command to install the Cisco BAMS disk configuration scripts:

```
pkgadd -d /cdrom/cdrom0/CSCOh027.pkg
```

Text similar to the following is displayed.

The following packages are available:

```
1  CSCOh027      Media Gateway Controller BAMS Archive Partition Package
                   (sparc) 3.0(6)
```

```
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

**Note**

You can also download the Sparc-based Cisco BAMS archive partition package (CSCOh027) from Cisco.com. For example, download the CSCOh027 package to the /opt/SW folder on the Sparc-based platform and use the command, `pkgadd -d /opt/SW/CSCOh027.pkg`.

- Step 2** Press **Enter** to accept the default answer **all**.

Text similar to the following is displayed:

```
Processing package instance <CSCOh027> from </var/tmp/CSCOh027.pkg>
```

```
Media Gateway Controller BAMS Archive Partition Package(sparc) 3.0(6)
```

```
Cisco Systems, Inc.
```

```
## Executing checkinstall script.
CSCOh027 checkinstall log file at /var/tmp/CSCOh027.checkinstall.log
Platform is SUNW,Sun-Fire-V210
This machine is running Solaris 5.10
```


The selected base directory </opt/sun_install> must exist before installation is attempted.

Do you want this directory created now [y,n,?,q]

Step 3 Answer **y** and press **Enter** to create the directory.

Text similar to the following is displayed:

```
Using </opt/sun_install> as the package base directory.
## Processing package information.
## Processing system information.
    1 package pathname is already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
```

The following files are already installed on the system and are being used by another package:

```
* /opt/sun_install <attribute change only>
```

```
* - conflict with a file which does not belong to any package.
```

Do you want to install these conflicting files [y,n,?,q] **y**

Step 4 Answer **y** and press **Enter** to install the files.

Text similar to the following is displayed:

```
## Checking for setuid/setgid programs.
```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <CSCOh027> [y,n,?]

Step 5 Type **y** and press **Enter** to continue the installation.

Text similar to the following is displayed:

```
Installing Media Gateway Controller BAMS Archive Partition Package as <CSCOh027>
```

```
## Installing part 1 of 1.
[ verifying class <none> ]
## Executing postinstall script.
```

```
!!
!! You must now change directories to
!! /opt/sun_install/BAMS_archive and run the
!! ./install_BAMS_archive script as root.
!!
```

Installation of <CSCOh027> was successful.

Step 6 Change directories. Enter the following command:

```
cd /opt/sun_install/BAMS_archive
```

Step 7 Run the first script. Enter the following command:

```
./install_BAMS_archive.sh
```

Text similar to the following is displayed:

Output will be logged in /opt/sun_install/BAMS_archive/install_BAMS_archive.log

The second hard drive will be reformatted by this script,
all data on this drive will be lost

Do you want to continue with formatting? (y or n)

Installation started on Wed Jul 9 20:54:33 EDT 2008
Platform is SUNW,Sun-Fire-V210
Searching for disks...done

FORMAT MENU:

```

disk          - select a disk
type          - select (define) a disk type
partition     - select (define) a partition table
current       - describe the current disk
format        - format and analyze the disk
fdisk         - run the fdisk program
repair        - repair a defective sector
label         - write label to the disk
analyze       - surface analysis
defect        - defect list management
backup        - search for backup labels
verify        - read and display labels
volname       - set 8-character volume name
!<cmd>        - execute <cmd>, then return
quit

```

format> disk

AVAILABLE DISK SELECTIONS:

0. c1t0d0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>
/pci@1c,600000/scsi@2/sd@0,0
1. c1t1d0 <SUN72G cyl 14087 alt 2 hd 24 sec 424>
/pci@1c,600000/scsi@2/sd@1,0

Specify disk (enter its number): 1

selecting c1t1d0

[disk formatted]

format> current

Current Disk = c1t1d0

<SUN72G cyl 14087 alt 2 hd 24 sec 424>

/pci@1c,600000/scsi@2/sd@1,0

format> q

2nd Disk device is: c1t1d0

Disk type is: SUN72G

Number of Cylinders : 14087

ARCHIVE directory mount point is /opt/CiscoBAMS/CDR/archive

Number of cylinders for archive partition:

14087

Building format log temp files...

Build partition table for c1t1d0 ...

Searching for disks...done

selecting c1t1d0

[disk formatted]

FORMAT MENU:

```

disk      - select a disk
type      - select (define) a disk type
partition - select (define) a partition table
current   - describe the current disk
format    - format and analyze the disk
repair    - repair a defective sector
label     - write label to the disk
analyze   - surface analysis
defect    - defect list management
backup    - search for backup labels
verify    - read and display labels
save      - save new disk/partition definitions
inquiry   - show vendor, product and revision
volname   - set 8-character volume name
!<cmd>    - execute <cmd>, then return
quit

```

```
format> p
```

PARTITION MENU:

```

0      - change `0' partition
1      - change `1' partition
2      - change `2' partition
3      - change `3' partition
4      - change `4' partition
5      - change `5' partition
6      - change `6' partition
7      - change `7' partition
select - select a predefined table
modify - modify a predefined partition table
name    - name the current table
print   - display the current table
label   - write partition map and label to the disk
!<cmd> - execute <cmd>, then return
quit

```

```
partition> 0
```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|------|------|------------|--------|-------------------|
| 0 | root | wm | 806 - 1208 | 1.96GB | (403/0/0) 4100928 |

```
Enter partition id tag[root]: unassigned
```

```
Enter partition permission flags[wm]: wm
```

```
Enter new starting cyl[806]: 0
```

```
Enter partition size[4100928b, 403c, 402e, 2002.41mb, 1.96gb]: 0c
```

```
partition> 1
```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|-----|------|-------------|--------|---------------------|
| 1 | var | wm | 1209 - 2215 | 4.89GB | (1007/0/0) 10247232 |

```
Enter partition id tag[var]: unassigned
```

```
Enter partition permission flags[wm]: wm
```

```
Enter new starting cyl[1209]: 0
```

```
Enter partition size[10247232b, 1007c, 1006e, 5003.53mb, 4.89gb]: 0c
```

```
partition> 3
```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|------|------|-----------|--------|-------------------|
| 3 | swap | wu | 0 - 805 | 3.91GB | (806/0/0) 8201856 |

```
Enter partition id tag[swap]: unassigned
```

```
Enter partition permission flags[wu]: wm
```

```
Enter new starting cyl[0]: 0
```

```
Enter partition size[8201856b, 806c, 805e, 4004.81mb, 3.91gb]: 0c
```

```
partition> 4
```

| Part | Tag | Flag | Cylinders | Size | Blocks |
|------|------------|------|-------------|---------|---------------|
| 4 | unassigned | wm | 2216 - 2220 | 24.84MB | (5/0/0) 50880 |

```

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[2216]: 0
Enter partition size[50880b, 5c, 4e, 24.84mb, 0.02gb]: 0c
partition> 5
Part      Tag      Flag      Cylinders      Size      Blocks
  5 unassigned      wm      2221 - 13683      55.62GB      (11463/0/0) 116647488

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[2221]: 0
Enter partition size[116647488b, 11463c, 11462e, 56956.78mb, 55.62gb]: 0c
partition> 6
Part      Tag      Flag      Cylinders      Size      Blocks
  6 unassigned      wm      13684 - 14086      1.96GB      (403/0/0) 4100928

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[13684]: 0
Enter partition size[4100928b, 403c, 402e, 2002.41mb, 1.96gb]: 0c
partition> 7
Part      Tag      Flag      Cylinders      Size      Blocks
  7 unassigned      wm           0           0      (0/0/0) 0

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[0]: 0
Enter partition size[0b, 0c, 0e, 0.00mb, 0.00gb]: 0c
partition> 2
Part      Tag      Flag      Cylinders      Size      Blocks
  2      backup      wm           0 - 14086      68.35GB      (14087/0/0) 143349312

Enter partition id tag[backup]: backup
Enter partition permission flags[wm]: wm
Enter new starting cyl[0]:
Enter partition size[143349312b, 14087c, 14086e, 69994.78mb, 68.35gb]: 14087c
partition> 0
Part      Tag      Flag      Cylinders      Size      Blocks
  0 unassigned      wm           0           0      (0/0/0) 0

Enter partition id tag[unassigned]: unassigned
Enter partition permission flags[wm]: wm
Enter new starting cyl[0]:
Enter partition size[0b, 0c, 0e, 0.00mb, 0.00gb]: 14087c
partition> p
Current partition table (unnamed):
Total disk cylinders available: 14087 + 2 (reserved cylinders)

Part      Tag      Flag      Cylinders      Size      Blocks
  0 unassigned      wm           0 - 14086      68.35GB      (14087/0/0) 143349312
  1 unassigned      wm           0           0      (0/0/0) 0
  2      backup      wm           0 - 14086      68.35GB      (14087/0/0) 143349312
  3 unassigned      wm           0           0      (0/0/0) 0
  4 unassigned      wm           0           0      (0/0/0) 0
  5 unassigned      wm           0           0      (0/0/0) 0
  6 unassigned      wm           0           0      (0/0/0) 0
  7 unassigned      wm           0           0      (0/0/0) 0

partition> l

partition> q

FORMAT MENU:

```

```

disk          - select a disk
type          - select (define) a disk type
partition    - select (define) a partition table
current      - describe the current disk
format       - format and analyze the disk
repair       - repair a defective sector
label        - write label to the disk
analyze      - surface analysis
defect       - defect list management
backup       - search for backup labels
verify       - read and display labels
save         - save new disk/partition definitions
inquiry      - show vendor, product and revision
volname      - set 8-character volume name
!<cmd>       - execute <cmd>, then return
quit
format> q

```

```
Build archive filesystem at /dev/rdsk/c1t1d0s0 ...
```

```
Remove any existing entry in /etc/vfstab for c1t1d0
```

```
Adding entries to /etc/vfstab
```

```
Mounting /opt/CiscoBAMS/CDR/archive
```

```
Success!!!
```

The Cisco BAMS archive partition installation is now complete. If you want to return to the list for package installation, go to [Table 2-2 on page 2-72](#).

Installing the Sparc-based Communications and Alarm Software Package (CSCOh026)

This package installs xterm, ntp, and ftp communications software on your host. It also installs the Lights Out Management (LOM) alarm software package if you are installing Solaris 10 on one of the following platforms:

- Sun Fire V120
- Netra 120
- Netra t 1120/1125
- Netra t 1400/1405
- Netra 20

If you are installing Solaris 10 on a Sun Fire V210, Netra 210, Netra 240 or Netra 440 platform, there are no separate alarm software packages to install because the alarm software is installed automatically. This software, ALOM, is integrated within the Solaris 10 operating system. Therefore, previous SUN LOM alarm packages like SUNWlomm (on Sun Fire V120) and SUNWtsalm (on Netra 112X) do not exist on these platforms. For additional information regarding lights-out alarms on the Sun Fire V210, Netra 210, Netra 240 and Netra 440, see the *SUN ALOM Guide* at <http://www.sun.com/servers/alom.html>.

**Note**

The installation of this package does not automatically enable ftp communications on your host. If you are installing this software on a Cisco BAMS system or if your host requires that the ftp communications be enabled, you can find instructions for enabling ftp in Step 5 of this procedure.

To install the communications and alarm software on your hosts, perform the following steps:

- Step 1** Load the Cisco Solaris 10 Operating Environment CD into the CD-ROM drive. Install this package by entering the following command at the # prompt:

```
# pkgadd -d /cdrom/cdrom0/CSCOh026.pkg
```

Text similar to the following is displayed along with copyright and trademark information:

The following packages are available:

```
1 CSCOh026      Media Gateway Controller PGW Specific Solaris 10 packages
                (sparc) 3.0(6)
```

```
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

**Note**

You can also download the Sparc-based communications and alarm software package (CSCOh026) from Cisco.com. For example, download the CSCOh026 package to the /opt/SW folder on the Sparc-based platform and use the command, pkgadd -d /opt/SW/CSCOh026.pkg.

- Step 2** Press **Enter** to accept the default answer of **all** and install all the packages. Text similar to the following is displayed:

```
Processing package instance <CSCOh026> from </var/tmp/CSCOh026.pkg>
```

```
Media Gateway Controller PGW Specific Solaris 10 packages(sparc) 3.0(6)
Cisco Systems, Inc.
```

```
## Executing checkinstall script.
```

```
CSCOh026 checkinstall log file at /var/tmp/CSCOh026.checkinstall.log
```

```
Platform is SUNW,Sun-Fire-V210
```

```
This machine is running Solaris 5.10
```

```
Using </opt/sun_install> as the package base directory.
```

```
## Processing package information.
```

```
## Processing system information.
```

```
2 package pathnames are already properly installed.
```

```
## Verifying disk space requirements.
```

```
## Checking for conflicts with packages already installed.
```

```
## Checking for setuid/setgid programs.
```

```
This package contains scripts which will be executed with super-user
permission during the process of installing this package.
```

```
Do you want to continue with the installation of <CSCOh026> [y,n,?]
```

- Step 3** Type **y** and press **Enter** to continue the installation. Text similar to the following is displayed:

```
Installing Media Gateway Controller PGW Specific Solaris 10 packages as <CSCOh026>
```

```
## Installing part 1 of 1.
```

```
/opt/sun_install/SolPkg/137324-01.zip
```

```
/opt/sun_install/SolPkg <implied directory>
```

```
/opt/sun_install/SolPkg/LOM20.tar.gz
```

```
/opt/sun_install/SolPkg/SUNWftpr.tar.gz
```

```
/opt/sun_install/SolPkg/SUNWftpu.tar.gz
```

```

/opt/sun_install/SolPkg/SUNWnfscr.tar.gz
/opt/sun_install/SolPkg/SUNWnfscr.tar.gz
/opt/sun_install/SolPkg/SUNWnfscu.tar.gz
/opt/sun_install/SolPkg/SUNWnfsskr.tar.gz
/opt/sun_install/SolPkg/SUNWnfssr.tar.gz
/opt/sun_install/SolPkg/SUNWnfssu.tar.gz
/opt/sun_install/SolPkg/SUNWtftp.tar.gz
/opt/sun_install/SolPkg/SUNWtftp.pr.tar.gz
/opt/sun_install/SolPkg/SUNWvts.tar.gz
/opt/sun_install/SolPkg/SUNWvtsmn.tar.gz
/opt/sun_install/SolPkg/SUNWvtstr.tar.gz
/opt/sun_install/SolPkg/SUNWvtsts.tar.gz
/opt/sun_install/SolPkg/SUNWxwopt.tar.gz
/opt/sun_install/SolPkg/autoinspkg
/opt/sun_install/SolPkg/autoremovevts
/opt/sun_install/SolPkg/configNtp.sh
/opt/sun_install/SolPkg/gunzip
/opt/sun_install/SolPkg/install_SolPkg.sh
/opt/sun_install/SolPkg/ntp_Sparc.tar.gz
/opt/sun_install/SolPkg/uninstall_SolPkg.sh
[ verifying class <none> ]
## Executing postinstall script.

!!
!! You must now change directories to
!! /opt/sun_install/SolPkg and run the
!! ./install_SolPkg.sh script as root.
!!
Installation of <CSCOh026> was successful.

```

Step 4 Enter the following commands to change directories and execute the installation script.

```

cd /opt/sun_install/SolPkg
./install_SolPkg.sh

```

Text similar to the following is displayed:



Note The following command output is truncated. These lists vary over time.

```

You are running as root - Good...
x ./SUNWxwopt, 0 bytes, 0 tape blocks
x ./SUNWxwopt/archive, 0 bytes, 0 tape blocks
x ./SUNWxwopt/archive/none.bz2, 625965 bytes, 1223 tape blocks
x ./SUNWxwopt/install, 0 bytes, 0 tape blocks
x ./SUNWxwopt/install/copyright, 93 bytes, 1 tape blocks
x ./SUNWxwopt/install/depend, 344 bytes, 1 tape blocks
x ./SUNWxwopt/install/i.none, 2245 bytes, 5 tape blocks
x ./SUNWxwopt/pkginfo, 473 bytes, 1 tape blocks
x ./SUNWxwopt/pkgmap, 4506 bytes, 9 tape blocks
x ./SUNWxwopt/reloc, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/bin, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib/app-defaults, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib/X11, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib/X11/twm, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib/X11/xdm, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWxwopt

```

```

Processing package instance <SUNWxwopt> from </tmp>

```

```

X Window System Optional Clients(sparc) 6.6.2.7400,REV=0.2004.12.15
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
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Using </usr> as the package base directory.
## Processing package information.
## Processing system information.
    6 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <SUNWxwopt> [y,n,?] y

Installing X Window System Optional Clients as <SUNWxwopt>

```

## Installing part 1 of 1.
3379 blocks

```

Installation of <SUNWxwopt> was successful.

```

x ./SUNWftpr, 0 bytes, 0 tape blocks
x ./SUNWftpr/install, 0 bytes, 0 tape blocks
x ./SUNWftpr/install/copyright, 93 bytes, 1 tape blocks
x ./SUNWftpr/install/depend, 1036 bytes, 3 tape blocks
x ./SUNWftpr/install/i.ftpaccess, 2849 bytes, 6 tape blocks
x ./SUNWftpr/install/i.ftpusers, 1506 bytes, 3 tape blocks
x ./SUNWftpr/install/i.manifest, 1503 bytes, 3 tape blocks
x ./SUNWftpr/install/i.preserve, 186 bytes, 1 tape blocks
x ./SUNWftpr/install/r.manifest, 1044 bytes, 3 tape blocks
x ./SUNWftpr/pkginfo, 452 bytes, 1 tape blocks
x ./SUNWftpr/pkgmap, 982 bytes, 2 tape blocks
x ./SUNWftpr/reloc, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/etc, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/etc/ftpd, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpaccess, 1518 bytes, 3 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpconversions, 946 bytes, 2 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpgroups, 104 bytes, 1 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftphosts, 108 bytes, 1 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpservers, 114 bytes, 1 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpusers, 198 bytes, 1 tape blocks
x ./SUNWftpr/reloc/var, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/var/svc, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/var/svc/manifest, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/var/svc/manifest/network, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/var/svc/manifest/network/ftp.xml, 1779 bytes, 4 tape blocks
spawn pkgadd -d . SUNWftpr

```

Processing package instance <SUNWftpr> from </tmp>

```

FTP Server, (Root)(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
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Using </> as the package base directory.
## Processing package information.
## Processing system information.
    5 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

```


This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <SUNWftpr> [y,n,?] y

Installing FTP Server, (Root) as <SUNWftpr>

```
## Installing part 1 of 1.
[ verifying class <none> ]
[ verifying class <preserve> ]
[ verifying class <ftpaccess> ]
[ verifying class <ftpusers> ]
y
[ verifying class <manifest> ]
```

Installation of <SUNWftpr> was successful.

```
x ./SUNWftpu, 0 bytes, 0 tape blocks
x ./SUNWftpu/archive, 0 bytes, 0 tape blocks
x ./SUNWftpu/archive/none.bz2, 119958 bytes, 235 tape blocks
x ./SUNWftpu/install, 0 bytes, 0 tape blocks
x ./SUNWftpu/install/copyright, 8644 bytes, 17 tape blocks
x ./SUNWftpu/install/depend, 1130 bytes, 3 tape blocks
x ./SUNWftpu/install/i.none, 2245 bytes, 5 tape blocks
x ./SUNWftpu/pkginfo, 495 bytes, 1 tape blocks
x ./SUNWftpu/pkgmap, 673 bytes, 2 tape blocks
x ./SUNWftpu/reloc, 0 bytes, 0 tape blocks
x ./SUNWftpu/reloc/usr, 0 bytes, 0 tape blocks
x ./SUNWftpu/reloc/usr/sbin, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWftpu
```

Processing package instance <SUNWftpu> from </tmp>

```
FTP Server, (Usr)(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2001-2003 Sun Microsystems, Inc. All rights reserved.
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```

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```

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        SUCH DAMAGE.

```

```
Using </> as the package base directory.
```

```

## Processing package information.
## Processing system information.
    2 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

```

```

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

```

```

Do you want to continue with the installation of <SUNWftpu> [y,n,?]
Installing FTP Server, (Usr) as <SUNWftpu>

```

```

## Installing part 1 of 1.
577 blocks

```

```

Installation of <SUNWftpu> was successful.
spawn pkgrm SUNWvtsmn

```

```

The following package is currently installed:
    SUNWvtsmn  SunVTS Man Pages
               (sparc) 6.4,REV=2007.07.05.12.46

```

```
Do you want to remove this package? [y,n,?,q] y
```

```

## Removing installed package instance <SUNWvtsmn>
## Verifying package <SUNWvtsmn> dependencies in global zone
## Processing package information.
## Removing pathnames in class <none>
/opt/SUNWvts/man/man1m/vtsui.1m
/opt/SUNWvts/man/man1m/vtstty.1m
/opt/SUNWvts/man/man1m/vtsprobe.1m
/opt/SUNWvts/man/man1m/vtsk.1m
/opt/SUNWvts/man/man1m/vts_cmd.1m
/opt/SUNWvts/man/man1m/sunvts.1m

```

```
...
```

```

/opt/SUNWvts/lib/locale/C <shared pathname not removed>
/opt/SUNWvts/lib/locale <shared pathname not removed>
/opt/SUNWvts/lib <shared pathname not removed>
/opt/SUNWvts <shared pathname not removed>
## Updating system information.

```

```

Removal of <SUNWvtsmn> was successful.
spawn pkgrm SUNWvtshr

```

```

The following package is currently installed:
    SUNWvtshr  SunVTS Framework (Root)
               (sparc) 6.4,REV=2007.07.05.10.00

```

```
Do you want to remove this package? [y,n,?,q] y
```

```

## Verifying package <SUNWvtshr> dependencies in global zone
## Processing package information.
## Removing pathnames in class <none>
/etc/opt/SUNWvts/sunvts.conf.example
/etc/opt/SUNWvts

```

```

/etc/opt <shared pathname not removed>
/etc <shared pathname not removed>
## Updating system information.

Removal of <SUNWvtsr> was successful.
spawn pkgrm SUNWvtsr

The following package is currently installed:
    SUNWvtsr    SunVTS for Tests
                (sparc) 6.4,REV=2007.07.05.12.46

Do you want to remove this package? [y,n,?,q] y

## Removing installed package instance <SUNWvtsr>
## Verifying package <SUNWvtsr> dependencies in global zone
## Processing package information.
## Removing pathnames in class <none>
/opt/SUNWvtsr/lib/sparcv9 <shared pathname not removed>
/opt/SUNWvtsr/lib/probe/sunlink_probe.so
/opt/SUNWvtsr/lib/probe/ssptest_probe.so
/opt/SUNWvtsr/lib/probe/sparcv9/xnetlbttest_probe.so
/opt/SUNWvtsr/lib/probe/sparcv9/vmemtest_probe.so

...

/opt/SUNWvtsr/bin/cmos.bin
/opt/SUNWvtsr/bin/bios.bin
/opt/SUNWvtsr/bin <shared pathname not removed>
/opt/SUNWvtsr <shared pathname not removed>
## Updating system information.

Removal of <SUNWvtsr> was successful.
spawn pkgrm SUNWvtsr

The following package is currently installed:
    SUNWvts     SunVTS Framework
                (sparc) 6.4,REV=2007.07.05.10.00

Do you want to remove this package? [y,n,?,q] y

## Removing installed package instance <SUNWvts>
## Verifying package <SUNWvts> dependencies in global zone
## Processing package information.
## Removing pathnames in class <none>
/opt/SUNWvts/lib/sparcv9/libvtsutil.so.1
/opt/SUNWvts/lib/sparcv9/libvtsutil.so
/opt/SUNWvts/lib/sparcv9/libvtsthm.so.1

...

/opt/SUNWvts/bin
/opt/SUNWvts/README
/opt/SUNWvts
## Updating system information.

Removal of <SUNWvts> was successful.
x SUNWvts, 0 bytes, 0 tape blocks
x SUNWvts/archive, 0 bytes, 0 tape blocks
x SUNWvts/archive/none.bz2, 877058 bytes, 1714 tape blocks
x SUNWvts/install, 0 bytes, 0 tape blocks
x SUNWvts/install/checkinstall, 971 bytes, 2 tape blocks
x SUNWvts/install/copyright, 93 bytes, 1 tape blocks

...

```

```
x SUNWvts/reloc/sunwvts/lib/locale/c/LC_MESSAGES, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/lib/sparcv9, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWvts
```

```
Processing package instance <SUNWvts> from </tmp>
```

```
SunVTS Framework(sparc) 6.4,REV=2007.07.05.10.00
Copyright 2007 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
## Executing checkinstall script.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.
```

```
This package contains scripts which will be executed with super-user
permission during the process of installing this package.
```

```
Do you want to continue with the installation of <SUNWvts> [y,n,?] y
```

```
Installing SunVTS Framework as <SUNWvts>
```

```
## Installing part 1 of 1.
8132 blocks
```

```
Installation of <SUNWvts> was successful.
x SUNWvtsts, 0 bytes, 0 tape blocks
x SUNWvtsts/archive, 0 bytes, 0 tape blocks
x SUNWvtsts/archive/none.bz2, 9661272 bytes, 18870 tape blocks
x SUNWvtsts/install, 0 bytes, 0 tape blocks
x SUNWvtsts/install/checkinstall, 1199 bytes, 3 tape blocks
```

```
...
```

```
x SUNWvtsts/reloc/sunwvts/lib/probe, 0 bytes, 0 tape blocks
x SUNWvtsts/reloc/sunwvts/lib/probe/sparcv9, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWvtsts
```

```
Processing package instance <SUNWvtsts> from </tmp>
```

```
SunVTS for Tests(sparc) 6.4,REV=2007.07.05.12.46
Copyright 2007 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
## Executing checkinstall script.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
    14 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.
```

```
This package contains scripts which will be executed with super-user
permission during the process of installing this package.
```

```
Do you want to continue with the installation of <SUNWvtsts> [y,n,?] y
```

```
Installing SunVTS for Tests as <SUNWvtsts>
```

```

## Installing part 1 of 1.
y
y
y
94197 blocks

Installation of <SUNWvts> was successful.
x SUNWvtsr, 0 bytes, 0 tape blocks
x SUNWvtsr/archive, 0 bytes, 0 tape blocks
x SUNWvtsr/archive/none.bz2, 1280 bytes, 3 tape blocks
x SUNWvtsr/install, 0 bytes, 0 tape blocks
x SUNWvtsr/install/copyright, 93 bytes, 1 tape blocks
x SUNWvtsr/install/depend, 848 bytes, 2 tape blocks
x SUNWvtsr/install/i.none, 2245 bytes, 5 tape blocks
x SUNWvtsr/pkginfo, 563 bytes, 2 tape blocks
x SUNWvtsr/pkgmap, 279 bytes, 1 tape blocks
x SUNWvtsr/reloc, 0 bytes, 0 tape blocks
x SUNWvtsr/reloc/etc, 0 bytes, 0 tape blocks
x SUNWvtsr/reloc/etc/opt, 0 bytes, 0 tape blocks
x SUNWvtsr/reloc/etc/opt/sunwvts, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWvtsr

Processing package instance <SUNWvtsr> from </tmp>

SunVTS Framework (Root)(sparc) 6.4,REV=2007.07.05.10.00
Copyright 2007 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
Using </> as the package base directory.
## Processing package information.
## Processing system information.
    2 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWvtsr> [y,n,?] y

Installing SunVTS Framework (Root) as <SUNWvtsr>

## Installing part 1 of 1.
6 blocks

Installation of <SUNWvtsr> was successful.
x SUNWvtsmn, 0 bytes, 0 tape blocks
x SUNWvtsmn/archive, 0 bytes, 0 tape blocks

...

x SUNWvtsmn/reloc/sunwvts/lib/locale/c/help/user_guide/shared/chars, 0 bytes, 0 tape
blocks
x SUNWvtsmn/reloc/sunwvts/man, 0 bytes, 0 tape blocks
x SUNWvtsmn/reloc/sunwvts/man/man1m, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWvtsmn

Processing package instance <SUNWvtsmn> from </tmp>

SunVTS Man Pages(sparc) 6.4,REV=2007.07.05.12.46
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Use is subject to license terms.
Using </opt> as the package base directory.

```

```

## Processing package information.
## Processing system information.
   5 package pathnames are already properly installed.
## Verifying package dependencies.
WARNING:
    The <SUNWdoc> package "Documentation Tools " is a
    prerequisite package and should be installed.

Do you want to continue with the installation of <SUNWvtsmn> [y,n,?] y
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.
This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWvtsmn> [y,n,?] y

Installing SunVTS Man Pages as <SUNWvtsmn>

## Installing part 1 of 1.
9419 blocks

Installation of <SUNWvtsmn> was successful.
Y
Y
Archive: 137324-01.zip
   creating: 137324-01/
   creating: 137324-01/SUNWvts/
   inflating: 137324-01/SUNWvts/pkgmap

...

inflating: 137324-01/.diPatch
   inflating: 137324-01/patchinfo
   inflating: 137324-01/prepatch
   inflating: 137324-01/README.137324-01
   inflating: 137324-01/LLEGAL_LICENSE.TXT
Validating patches...

Loading patches installed on the system...

Done!

Loading patches requested to install.

Done!

Checking patches that you specified for installation.

Done!

Approved patches will be installed in this order:

137324-01

Checking installed patches...
Executing prepatch script...
Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...

Patch 137324-01 has been successfully installed.
See /var/sadm/patch/137324-01/log for details

```



```

Patch packages installed:
    SUNWvts
    SUNWvtsts

Installation of patch 137324-01 successful
x SUNWnfsckr, 0 bytes, 0 tape blocks
x SUNWnfsckr/archive, 0 bytes, 0 tape blocks

...

x SUNWnfsckr/reloc/kernel/misc, 0 bytes, 0 tape blocks
x SUNWnfsckr/reloc/kernel/misc/sparcv9, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWnfsckr

Processing package instance <SUNWnfsckr> from </tmp>

Network File System (NFS) client kernel support (Root)(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2007 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
Using </> as the package base directory.
## Processing package information.
## Processing system information.
    7 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWnfsckr> [y,n,?] y

Installing Network File System (NFS) client kernel support (Root) as <SUNWnfsckr>

## Installing part 1 of 1.
2762 blocks

Installation of <SUNWnfsckr> was successful.
x SUNWnfsckr, 0 bytes, 0 tape blocks
x SUNWnfsckr/archive, 0 bytes, 0 tape blocks
x SUNWnfsckr/archive/none.bz2, 23793 bytes, 47 tape blocks
x SUNWnfsckr/install, 0 bytes, 0 tape blocks
x SUNWnfsckr/install/copyright, 93 bytes, 1 tape blocks
x SUNWnfsckr/reloc/var/svc/manifest/network/nfs/nlockmgr.xml, 2204 bytes, 5 tape blocks
x SUNWnfsckr/reloc/var/svc/manifest/network/nfs/status.xml, 2023 bytes, 4 tape blocks
spawn pkgadd -d . SUNWnfsckr

Processing package instance <SUNWnfsckr> from </tmp>

Network File System (NFS) client support (Root)(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2007 Sun Microsystems, Inc. All rights reserved.
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Using </> as the package base directory.
## Processing package information.
## Processing system information.
    11 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

```

```

Do you want to continue with the installation of <SUNWnfscr> [y,n,?] y

Installing Network File System (NFS) client support (Root) as <SUNWnfscr>

## Installing part 1 of 1.
109 blocks
[ verifying class <nfssecconf> ]
[ verifying class <defnfs> ]
y
y
y
[ verifying class <manifest> ]
## Executing postinstall script.

Installation of <SUNWnfscr> was successful.
x SUNWnfscu, 0 bytes, 0 tape blocks
x SUNWnfscu/archive, 0 bytes, 0 tape blocks
x SUNWnfscu/archive/none.bz2, 158114 bytes, 309 tape blocks
x SUNWnfscu/install, 0 bytes, 0 tape blocks

...

x SUNWnfscu/reloc/usr/lib/fs/nfs, 0 bytes, 0 tape blocks
x SUNWnfscu/reloc/usr/lib/nfs, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWnfscu

Processing package instance <SUNWnfscu> from </tmp>

Network File System (NFS) client support (Usrc) 11.10.0,REV=2005.01.21.15.53
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Using </> as the package base directory.
## Processing package information.
## Processing system information.
    5 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWnfscu> [y,n,?] y

Installing Network File System (NFS) client support (Usrc) as <SUNWnfscu>

## Installing part 1 of 1.
1026 blocks
## Executing postinstall script.

Installation of <SUNWnfscu> was successful.
x SUNWnfsskr, 0 bytes, 0 tape blocks
x SUNWnfsskr/archive, 0 bytes, 0 tape blocks
x SUNWnfsskr/archive/none.bz2, 206990 bytes, 405 tape blocks
x SUNWnfsskr/install, 0 bytes, 0 tape blocks
x SUNWnfsskr/install/copyright, 93 bytes, 1 tape blocks
x SUNWnfsskr/install/depend, 1036 bytes, 3 tape blocks

...

x SUNWnfsskr/reloc/kernel/misc/sparcv9, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWnfsskr

```

```

Processing package instance <SUNWnfsskr> from </tmp>

Network File System (NFS) server kernel support (Root)(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2007 Sun Microsystems, Inc. All rights reserved.
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Using </> as the package base directory.
## Processing package information.
## Processing system information.
    3 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user

...

Processing package instance <SUNWtftp> from </tmp>

Trivial File Transfer Server(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2007 Sun Microsystems, Inc. All rights reserved.
...

Trivial File Transfer Server (Root)(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2005 Sun Microsystems, Inc. All rights reserved.

NTP, (Root)(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2005 Sun Microsystems, Inc. All rights reserved.

NTP, (Usr)(sparc) 11.10.0,REV=2005.01.21.15.53
Copyright 2005 Sun Microsystems, Inc. All rights reserved.

...
Installation of <SUNWntpu> was successful.
Enter the IP address of NTP server:

```

Step 5 Type the IP address for the NTP server used for your network and press **Enter**. Text similar to the following is displayed:

```

NTP is configured and enabled. You can manually change the configuration by modifying
/etc/inet/ntp.conf and disable NTP by run 'svcadm enable ntp'

At any time, you may uninstall the software installed
by this package with the following commands:

cd /opt/sun_install/SolPkg
./uninstall_SolPkg.sh

which will uninstall all the solaris software
installed with this package

NTP software is installed and configured. System reboot is required to activate it. Do you
want to reboot now?[yes|no]

```

Step 6 You must reboot your system for the changes to take effect. Type **yes** and press **Enter**.

Step 7 If you require ftp access to your Cisco PGW 2200 Softswitch by Cisco BAMS or some other product, type the following command and press **Enter**:

```
svcadm enable ftp
```

**Note**

If you need to disable the ftp communications software, use the **svcadm disable ftp** command. If you need to determine the status of the ftp communications software, use the **svcs -a | grep ftp** command.

The communications and alarm software installation is now complete. Go to [Table 2-2 on page 2-72](#) if you want to continue with the list for package installation.

Installing the Opteron-based Communications Software Package (CSCOh036)

Installing this package adds xterm, ntp, and ftp communications software on your host. To install the communication software on your hosts, perform the following steps:

**Note**

The installation of this package does not automatically enable ftp communications on your host. If you are installing this software on a Cisco BAMS system or if your host requires that the ftp communications be enabled, you can find instructions for enabling ftp in Step 7 of this procedure.

- Step 1** Load the Cisco Solaris 10 Operating Environment CD into the CD-ROM drive. Install this package by entering the following command at the # prompt.

```
# pkgadd -d /cdrom/cdrom0/CSCOh036.pkg
```

Text similar to the following is displayed along with copyright and trademark information:

The following packages are available:

```
1  CSCOh036      Media Gateway Controller PGW Specific Solaris 10 packages
                   (i386) 3.0(6)
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:

**Note**

You can also download the Opteron-based Solaris 10 communications software package (CSCOh036) from Cisco.com. For example, download the CSCOh036 package to the /opt/SW folder on the Opteron-based platform and use the command, **pkgadd -d /opt/SW/CSCOh036.pkg**.

- Step 2** Press **Enter** to accept the default answer of **all** and install all the packages. Text similar to the following is displayed:

```
Processing package instance <CSCOh036> from </var/tmp/CSCOh036.pkg>
```

```
Media Gateway Controller PGW Specific Solaris 10 packages(i386) 3.0(6)
Cisco Systems, Inc.
## Executing checkinstall script.
CSCOh036 checkinstall log file at /var/tmp/CSCOh036.checkinstall.log
Platform is i86pc
This machine is running Solaris 5.10
Using </opt/sun_install> as the package base directory.
## Processing package information.
## Processing system information.
2 package pathnames are already properly installed.
```

```
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.
```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <CSCOh036> [y,n,?]

Step 3 Type **y** and press **Enter** to continue the installation. Text similar to the following is displayed:

Installing Media Gateway Controller PGW Specific Solaris 10 packages as <CSCOh036>

```
## Installing part 1 of 1.
/opt/sun_install/SolPkg/install_SolPkg.sh
[ verifying class <none> ]
## Executing postinstall script.
```

```
!!
!! You must now change directories to
!! /opt/sun_install/SolPkg and run the
!! ./install_SolPkg.sh script as root.
!!
Installation of <CSCOh036> was successful.
```

Step 4 Enter the following commands to change directories and execute the installation script:

```
cd /opt/sun_install/SolPkg
./install_SolPkg.sh
```

Text similar to the following is displayed:



Note Ellipsis is used in the system output to indicate the omission of the patch lists that it will install. These lists vary over time.

```
You are running as root - Good...
x /usr/local, 0 bytes, 0 tape blocks
x /usr/local/bin, 0 bytes, 0 tape blocks
x /usr/local/bin/expect, 213936 bytes, 418 tape blocks
x /usr/local/lib, 0 bytes, 0 tape blocks
x /usr/local/lib/libtcl8.4.so, 999804 bytes, 1953 tape blocks
x /usr/local/lib/tcl8.4, 0 bytes, 0 tape blocks
x /usr/local/lib/tcl8.4/auto.tcl, 20911 bytes, 41 tape blocks
x /usr/local/lib/tcl8.4/history.tcl, 9030 bytes, 18 tape blocks
x /usr/local/lib/tcl8.4/init.tcl, 23714 bytes, 47 tape blocks
x /usr/local/lib/tcl8.4/ldAix, 2856 bytes, 6 tape blocks
x /usr/local/lib/tcl8.4/ldAout.tcl, 6802 bytes, 14 tape blocks
...
x ./SUNWxwopt/pkgmap, 4502 bytes, 9 tape blocks
x ./SUNWxwopt/reloc, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/bin, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib/app-defaults, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib/X11, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib/X11/twm, 0 bytes, 0 tape blocks
x ./SUNWxwopt/reloc/openwin/lib/X11/xdm, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWxwopt

Processing package instance <SUNWxwopt> from </tmp>
```

```

X Window System Optional Clients(i386) 6.6.2.7400,REV=0.2004.12.15
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
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Using </usr> as the package base directory.
## Processing package information.
## Processing system information.
    6 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <SUNWxwopt> [y,n,?] y

Installing X Window System Optional Clients as <SUNWxwopt>

```

## Installing part 1 of 1.
2958 blocks

```

```

Installation of <SUNWxwopt> was successful.
x ./SUNWftpr, 0 bytes, 0 tape blocks
x ./SUNWftpr/install, 0 bytes, 0 tape blocks
x ./SUNWftpr/install/copyright, 93 bytes, 1 tape blocks
x ./SUNWftpr/install/depend, 1036 bytes, 3 tape blocks
x ./SUNWftpr/install/i.ftpaccess, 2849 bytes, 6 tape blocks
x ./SUNWftpr/install/i.ftpusers, 1506 bytes, 3 tape blocks
x ./SUNWftpr/install/i.manifest, 1503 bytes, 3 tape blocks
x ./SUNWftpr/install/i.preserve, 186 bytes, 1 tape blocks
x ./SUNWftpr/install/r.manifest, 1363 bytes, 3 tape blocks
x ./SUNWftpr/pkginfo, 706 bytes, 2 tape blocks
x ./SUNWftpr/pkgmap, 982 bytes, 2 tape blocks
x ./SUNWftpr/reloc, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/etc, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/etc/ftpd, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpaccess, 1518 bytes, 3 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpconversions, 946 bytes, 2 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpgroups, 104 bytes, 1 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftphosts, 108 bytes, 1 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpservers, 114 bytes, 1 tape blocks
x ./SUNWftpr/reloc/etc/ftpd/ftpusers, 198 bytes, 1 tape blocks
x ./SUNWftpr/reloc/var, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/var/svc, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/var/svc/manifest, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/var/svc/manifest/network, 0 bytes, 0 tape blocks
x ./SUNWftpr/reloc/var/svc/manifest/network/ftp.xml, 1779 bytes, 4 tape blocks
spawn pkgadd -d . SUNWftpr

```

Processing package instance <SUNWftpr> from </tmp>

```

FTP Server, (Root)(i386) 11.10.0,REV=2005.01.21.16.34
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```

This appears to be an attempt to install the same architecture and version of a package which is already installed. This installation will attempt to overwrite this package.

```

Using </> as the package base directory.
## Processing package information.
## Processing system information.

```

```

    7 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWftpr> [y,n,?] y

Installing FTP Server, (Root) as <SUNWftpr>

## Installing part 1 of 1.
[ verifying class <none> ]
[ verifying class <preserve> ]
[ verifying class <ftpaccess> ]
[ verifying class <ftpusers> ]
[ verifying class <manifest> ]

Installation of <SUNWftpr> was successful.
Y
Y
Y
x ./SUNWftpu, 0 bytes, 0 tape blocks
x ./SUNWftpu/archive, 0 bytes, 0 tape blocks
x ./SUNWftpu/archive/none.bz2, 98668 bytes, 193 tape blocks
x ./SUNWftpu/install, 0 bytes, 0 tape blocks
x ./SUNWftpu/install/copyright, 8644 bytes, 17 tape blocks
x ./SUNWftpu/install/depend, 1130 bytes, 3 tape blocks
x ./SUNWftpu/install/i.none, 2245 bytes, 5 tape blocks
x ./SUNWftpu/pkginfo, 630 bytes, 2 tape blocks
x ./SUNWftpu/pkgmap, 671 bytes, 2 tape blocks
x ./SUNWftpu/reloc, 0 bytes, 0 tape blocks
x ./SUNWftpu/reloc/usr, 0 bytes, 0 tape blocks
x ./SUNWftpu/reloc/usr/sbin, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWftpu

Processing package instance <SUNWftpu> from </tmp>

FTP Server, (Usr)(i386) 11.10.0,REV=2005.01.21.16.34
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```

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Using </> as the package base directory.

```
## Processing package information.
## Processing system information.
  2 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.
```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <SUNWftpu> [y,n,?]
Installing FTP Server, (Usr) as <SUNWftpu>

```
## Installing part 1 of 1.
500 blocks
```

Installation of <SUNWftpu> was successful.
spawn pkgrm SUNWvtsmn

The following package is currently installed:

| | |
|-----------|--------------------------|
| SUNWvtsmn | SunVTS man pages |
| (i386) | 6.4,REV=2007.07.05.13.25 |

Do you want to remove this package? [y,n,?,q] y

```
## Removing installed package instance <SUNWvtsmn>
## Verifying package <SUNWvtsmn> dependencies in global zone
## Processing package information.
## Removing pathnames in class <none>
/opt/SUNWvts/man/man1m/vtsui.1m
/opt/SUNWvts/man/man1m/vtstty.1m
/opt/SUNWvts/man/man1m/vtsprobe.1m
/opt/SUNWvts/man/man1m/vtsk.1m
/opt/SUNWvts/man/man1m/vts_cmd.1m
```

...

```
opt/SUNWvts/lib/locale/C <shared pathname not removed>
/opt/SUNWvts/lib/locale <shared pathname not removed>
/opt/SUNWvts/lib <shared pathname not removed>
/opt/SUNWvts <shared pathname not removed>
## Updating system information.
```

Removal of <SUNWvtsmn> was successful.
spawn pkgrm SUNWvtshr

The following package is currently installed:

| | |
|-----------|--------------------------|
| SUNWvtshr | SunVTS Framework (Root) |
| (i386) | 6.4,REV=2007.07.05.10.11 |

Do you want to remove this package? [y,n,?,q] y

```
## Removing installed package instance <SUNWvtshr>
```

```

## Verifying package <SUNWvtsr> dependencies in global zone
## Processing package information.
## Removing pathnames in class <none>
/etc/opt/SUNWvts/sunvts.conf.example
/etc/opt/SUNWvts/lib/conf
/etc/opt/SUNWvts/lib
/etc/opt/SUNWvts
/etc/opt <shared pathname not removed>
/etc <shared pathname not removed>
## Updating system information.

Removal of <SUNWvtsr> was successful.
spawn pkgrm SUNWvtsr

The following package is currently installed:
    SUNWvtsr    SunVTS for Tests
                (i386) 6.4,REV=2007.07.05.13.25

Do you want to remove this package? [y,n,?,q] y

## Removing installed package instance <SUNWvtsr>
## Verifying package <SUNWvtsr> dependencies in global zone
## Processing package information.
## Removing pathnames in class <none>
/opt/SUNWvts/lib/probe/xnetlbtest_probe.so
/opt/SUNWvts/lib/probe/vmemtest_probe.so

...

/opt/SUNWvts/bin/.customtest
/opt/SUNWvts/bin <shared pathname not removed>
/opt/SUNWvts <shared pathname not removed>
## Updating system information.

Removal of <SUNWvtsr> was successful.
spawn pkgrm SUNWvtsr

The following package is currently installed:
    SUNWvts     SunVTS Framework
                (i386) 6.4,REV=2007.07.05.10.11

Do you want to remove this package? [y,n,?,q] y

## Removing installed package instance <SUNWvts>
## Verifying package <SUNWvts> dependencies in global zone
## Processing package information.
## Removing pathnames in class <none>
/opt/SUNWvts/lib/probe/64
/opt/SUNWvts/lib/probe
/opt/SUNWvts/lib/locale/C/help/help_s10.html
/opt/SUNWvts/lib/locale/C/help/help.html
/opt/SUNWvts/lib/locale/C/help/Copyright.libxml2

...

/opt/SUNWvts/README.64
/opt/SUNWvts/README
/opt/SUNWvts
## Updating system information.

Removal of <SUNWvts> was successful.
x SUNWvts, 0 bytes, 0 tape blocks
x SUNWvts/archive, 0 bytes, 0 tape blocks
x SUNWvts/archive/none.bz2, 1176648 bytes, 2299 tape blocks

```

```

x SUNWvts/install, 0 bytes, 0 tape blocks
x SUNWvts/install/checkinstall, 971 bytes, 2 tape blocks
x SUNWvts/install/copyright, 93 bytes, 1 tape blocks
x SUNWvts/install/depend, 849 bytes, 2 tape blocks
x SUNWvts/install/i.none, 2245 bytes, 5 tape blocks
x SUNWvts/pkginfo, 546 bytes, 2 tape blocks
x SUNWvts/pkgmap, 6639 bytes, 13 tape blocks
x SUNWvts/reloc, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/bin, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/bin/64, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/bin/pm, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/lib, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/lib/64, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/lib/conf, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/lib/locale, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/lib/locale/c, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/lib/locale/c/help, 0 bytes, 0 tape blocks
x SUNWvts/reloc/sunwvts/lib/locale/c/LC_MESSAGES, 0 bytes, 0 tape blocks
spawn pkgadd -d . SUNWvts

```

Processing package instance <SUNWvts> from </tmp>

```

SunVTS Framework(i386) 6.4,REV=2007.07.05.10.11
Copyright 2007 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
## Executing checkinstall script.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <SUNWvts> [y,n,?] y

Installing SunVTS Framework as <SUNWvts>

```

## Installing part 1 of 1.
9650 blocks

```

Installation of <SUNWvts> was successful.

...

Processing package instance <SUNWvtsts> from </tmp>

```

SunVTS for Tests(i386) 6.4,REV=2007.07.05.13.25
Copyright 2007 Sun Microsystems, Inc. All rights reserved.

```

...

Installation of <SUNWvtsts> was successful.

...

```

SunVTS Framework (Root)(i386) 6.4,REV=2007.07.05.10.11
Copyright 2007 Sun Microsystems, Inc. All rights reserved.

```

...

```
Installation of <SUNWvtsr> was successful.
...

SunVTS man pages(i386) 6.4,REV=2007.07.05.13.25
Copyright 2007 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWvtsmn> was successful.

Y
Y
Archive: 137325-01.zip
  creating: 137325-01/
  creating: 137325-01/SUNWvts/
  inflating: 137325-01/SUNWvts/pkgmap
  inflating: 137325-01/SUNWvts/pkginfo
  creating: 137325-01/SUNWvts/reloc/
  creating: 137325-01/SUNWvts/reloc/SUNWvts/
  inflating: 137325-01/SUNWvts/reloc/SUNWvts/README
  inflating: 137325-01/SUNWvts/reloc/SUNWvts/README.64

...

Patch 137325-01 has been successfully installed.
See /var/sadm/patch/137325-01/log for details

Patch packages installed:
  SUNWvts
  SUNWvtsts

Installation of patch 137325-01 successful

...

Network File System (NFS) client kernel support (Root)(i386) 11.10.0,REV=2005.01.21.16.34
Copyright 2007 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWnfscr> was successful.

...

Network File System (NFS) client support (Usr)(i386) 11.10.0,REV=2005.01.21.16.34
Copyright 2007 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWnfscu> was successful.

...

Network File System (NFS) server kernel support (Root)(i386) 11.10.0,REV=2005.01.21.16.34
Copyright 2007 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWnfsskr> was successful.

...

Network File System (NFS) server support (Root)(i386) 11.10.0,REV=2005.01.21.16.34
```

```

Copyright 2007 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWnfssr> was successful.

...

Network File System (NFS) server support (Usr)(i386) 11.10.0,REV=2005.01.21.16.34
Copyright 2007 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWnfssu> was successful.

...

Trivial File Transfer Server(i386) 11.10.0,REV=2005.01.21.16.34
Copyright 2007 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWtftp> was successful.

...

Trivial File Transfer Server (Root)(i386) 11.10.0,REV=2005.01.21.16.34
Copyright 2005 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWtftpr> was successful.

...

NTP, (Root)(i386) 11.10.0,REV=2005.01.21.16.34
Copyright 2005 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWntpr> was successful.

...

NTP, (Usr)(i386) 11.10.0,REV=2005.01.21.16.34
Copyright 2005 Sun Microsystems, Inc. All rights reserved.

...

Installation of <SUNWntpu> was successful.
Enter the IP address of NTP server:

```

Step 5 Enter the IP address for the NTP server used for your network and press **Enter**: Text similar to the following is displayed:

```

NTP is configured and enabled. You can manually change the configuration by modifying
/etc/inet/ntp.conf and disable NTP by run 'svcadm enable ntp'

```

```

At any time, you may uninstall the software installed
by this package with the following commands:

```

```

cd /opt/sun_install/SolPkg
./uninstall_SolPkg.sh

```

```

which will uninstall all the solaris software

```

installed with this package

NTP software is installed and configured. System reboot is required to activate it. Do you want to reboot now?[yes|no]

Step 6 You must reboot your system for the changes to take effect. Type **yes** and press **Enter**:

Step 7 If you require ftp access to your Cisco PGW 2200 Softswitch by Cisco BAMS or some other product, type the following command and press **Enter**:

```
svcadm enable ftp
```



Note If you need to disable the ftp communications software, use the **svcadm disable ftp** command. If you need to determine the status of the ftp communications software, use the **svcs -a | grep ftp** command.

The communications software installation is now complete. Go to [Table 2-2 on page 2-72](#) if you want to continue with the list for package installation.

Installing the Verification Test Suite Script Package (CSCOh021)

The Verification Test Suite (VTS) provides an optional script designed to test configured Sun Solaris 10 platforms used for Cisco PGW 2200 Softswitch, BAMS, and HSI products. VTS test instructions support the following interface cards:

- Sun GigaSwift Ethernet PCI card (order number X1150A)
- Sun 10/100BT Ethernet PCI card (order number X1033)
- Sun Quad Fast Ethernet PCI card (order number X1034A)

Perform all testing with a console log file enabled to capture everything entered at the console input and displayed on the console output. One way to accomplish this is through a terminal server connected to the console port of your platform. You can use the xterm program with the **-l -lf <logfile>** command line option to create the console log file.

For each target system in the test below, you should archive the console log file along with the VTS log file created with other records.



Note This VTS package is not supported by the Sun Fire X4600, the Sun Fire X4600 M2, or the Sun Netra X4200 M2 platform.

To install the VTS script package:

Step 1 Place the Cisco Solaris 10 Operating Environment CD in the CD-ROM drive of the target system.

Step 2 Type the following commands to install the VTS script package and press **Enter**:

```
# cd /cdrom/cdrom0
# pkgadd -d CSCOh021.pkg
```

Text similar to the following is displayed:

The following packages are available:

```
1  CSCOh021      Media Gateway Controller Solaris 10 test for SPARC/Opteron
                   (sparc,i386) 3.0(6)
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:

**Note**

You can also download the VTS script package (CSCOh021) from Cisco.com. For example, download the CSCOh021 package to the /opt/SW folder on the platform and use the command, `pkgadd -d /opt/SW/CSCOh021.pkg`. Make sure you download the platform-specific package for your platform (Sparc-based or Opteron-based).

Step 3 Press **Enter** to select all packages. Text similar to the following is displayed:

```
Processing package instance <CSCOh021> from </var/tmp/CSCOh021.pkg>

Media Gateway Controller Solaris 10 test for SPARC/Opteron(sparc,i386) 3.0(6)
Cisco Systems, Inc.
## Executing checkinstall script.
CSCOh021 checkinstall log file at /var/tmp/CSCOh021.checkinstall.log
Platform is SUNW,Sun-Fire-V210
This machine is running Solaris 5.10

Using </opt/sun_install> as the package base directory.
## Processing package information.
## Processing system information.
    2 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <CSCOh021> [y,n,?]
```

Step 4 Answer **y** and press **Enter** to continue with the installation. Text similar to the following is displayed:

```
Installing Media Gateway Controller Solaris 10 test for SPARC/Opteron as <CSCOh021>

## Installing part 1 of 1.
/opt/sun_install/VTSadmin.file
/opt/sun_install/vts/vts_script
/opt/sun_install/vts <implied directory>
/opt/sun_install/vts/vts_script6
[ verifying class <none> ]
## Executing postinstall script.

!!
!!  You must now change directories to /opt/sun_install/vts and
!!  run the ./vts_script script as root.
!!

Installation of <CSCOh021> was successful.
#
```

This completes the VTS installation. If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x.

Using the SunVTS Test Package

Use the SunVTS program to test the following:

- CPUs
- Memory
- Ethernet cards



Note

In order for you to fully test the Ethernet ports, all Ethernet ports must be configured with valid IP addresses and connected to an Ethernet network with at least one other machine on the network.

- Hard disks
- CD-ROM drive



Note

In order for you to pass the DVD/CD drive test, a disk must be in the DVD/CD drive.

- LOM hardware

Normal Unit Test

The normal unit test must be successfully run on each target system before it is shipped to the customer. A normal unit test checks 20 percent of each disk surface. To run a normal unit test, use the following procedure.



Caution

Do not run this test while the application is running because it could adversely affect the application performance.

Step 1 Change directories to the following directory:

```
# cd /opt/sun_install/vts
```

Step 2 Enter the following command to start the test:

```
# ./vts_script
```

Text similar to the following is displayed:

```
You are running as root - Good...
```

```
Platform is i86pc
OS version is 5.10
Platform type is i386
VTS 64-bit binary path is /opt/SUNWvts/bin/64
OS is 64-bits
checking for VTS packages
Check to see if VTS is already installed
package SUNWvts found
package SUNWvtsr found
package SUNWvtsts found
Check to see if XML is already installed
package SUNWlxml found
VTS version: 6.4,REV=2007.07.05.10.11
```

```

Checking to see if rpcbind is running
starting rpc services rpcbind
giving rpcbind a chance to start
Checking to see if vtsk is running
starting vtsk
giving vtsk a chance to start

VTS probe output:
Processor(s)
  CPU(cputest)
    CPU Test
  FPU(fputest)
    Floating Point Unit Test
  dtlb(dtlbtest)
    Data TLB Test
  l1cache(l1dcachetest)
    Level 1 Cache Test
  l2sram(l2sramtest)
    External Cache Test
  system(systemest)
    System Configuration= Sun Microsystems i86pc
    Memory size= 8064 Megabytes
Memory
  kmem(vmemtest)
    Total Swap: 10392MB
  mem(pmemtest)
    Memory Size:8064MB
  mem(ramtest)
    Total Physical Memory : 8064MB
BMC-Logical-Group
  BMC(bmcenvironment)
    BMC Enviornment test looks good
SCSI-Devices(mpt0)
  c0t2d0(disktest)
    Capacity: 68.36GB
    Controller: mpt0
    Vendor: FUJITSU
    SUN Id: MAY2073RCSUN72G
    Firmware Rev: 0401
    Serial Number: 0605S0157P
    Device Kind :disk
  c0t3d0(disktest)
    Capacity: 68.36GB
    Controller: mpt0
    Vendor: FUJITSU
    SUN Id: MAY2073RCSUN72G
    Firmware Rev: 0401
    Serial Number: 0605S0132W
    Device Kind :disk
IDE-Devices(ata0)
  c3t0d0(cddvdtest)
    Controller: ata0
Bus
  iobus(iobustest)
    platform = SUN

Network
  e1000g0(nettest)
    Host_Name:
    Host Address: 10.74.49.119
    Host ID: 18089793
    Domain Name:
  e1000g1(nettest)
    Host_Name:

```

```

Host Address: 10.0.49.119
Host ID: 18089793
Domain Name:
e1000g2(nettest)
Host_Name:
Host Address: 172.16.101.119
Host ID: 18089793
Domain Name:
e1000g3(netlbttest)
Port Address: Unknown
Host ID: 18089793
Comm.Ports
asy0(serialtest)
Port a -- asy0 /dev/term/a : /devices/ ... :a
USB-Devices
kbd(usbtest)
Device information: USB Keyboard

Unknown platform. Assuming only one CPU installed

Number of hard disks:          2
Hard disks:

Number of LOM or TSALARM devices:      0
LOM or TSALARM devices:

Number of SSP devices:             0
ALOM (SSP) devices:

Number of NALM devices:            0
NALM devices:

Number of configured network interfaces:      3
Configured network interfaces:
e1000g0
e1000g1
e1000g2

Number of unconfigured network interfaces:    1
Unconfigured network interfaces:
e1000g3

Total number of network interfaces: 4

Number of DVD/CD drives :          1
DVD/CD drives :
c3t0d0

Number of (virtual) CPUs :          2
Note: Dual core CPUs count as two virtual CPUs
(virtual) CPUs :
CPU

normal test

Level 1 Data Cache Test all ...

Floating Point Unit Test all ...

System Test ...

```

```

Central Processor Unit Test all ...

Level 1 Data Cache Test all done

System Test done

Central Processor Unit Test all done

Floating Point Unit Test all done

Physical Memory Test ( 8064MB) ...

Physical Memory Test done

Network Test e1000g0 ...

Network Test e1000g1 ...

Network Test e1000g2 ...

Network Loopback Test e1000g3 ...

DVD/CD Test c3t0d0 ...

Hard Disk Test c0t3d0 20% ...

Hard Disk Test c0t2d0 20% ...

Network Test e1000g0 done

Network Test e1000g1 done

Network Test e1000g2 done

Network Loopback Test e1000g3 done

DVD/CD Test c3t0d0 done

Hard Disk Test c0t3d0 done

Hard Disk Test c0t2d0 done
stopping vtsk
stopping rpcbind

*****
***** RESULTS *****
*****

normal test

Number of hard disks:          2
Hard disks:
c0t2d0
c0t3d0

Number of configured network interfaces:      3
Configured network interfaces:
e1000g0
e1000g1
e1000g2

Number of unconfigured network interfaces:    1
Unconfigured network interfaces:

```

```

e1000g3

Total number of network interfaces: 4

Number of DVD/CD drives :          1
CD-ROM/DVD drives :
c3t0d0

Number of LOM or TSALARM devices:      0
LOM or TSALARM devices:

Number of SSP devices:                0
ALOM devices:

Number of NALM devices:              0
NALM devices:

Number of (virtual) CPUs :            2
Note: Dual core CPUs count as two virtual CPUs
(virtual) CPUs :
CPU

Amount of physical memory : 8064MB

Amount of swap memory      : 10392MB

number of fatal errors :      0
number of errors       :      0

***** Fatal Errors *****
***** end of Fatal Errors *****
***** Errors *****
***** end of Errors *****

PPPPPP  AA  SSSSSS SSSSSS
PP  PP  A  A  SS      SS
PPPPPP AAAAAA SSSSSS SSSSSS
PP      AA  AA      SS      SS
PP      AA  AA SSSSSS SSSSSS

```



Note See [Table 2-5](#) for the approximate amount of time the test will take on the different platforms supported.

- Step 3** Once the test completes, examine the console output and the file `/opt/sun_install/vts_script.log`. Verify that the unit passed the test and that the proper number of hard disks and Ethernet interfaces were detected.

Running a Test in Brief Mode

When run in brief mode, the `vts_script` tests 1 percent of each disk surface. To run the test in brief mode:

- Step 1** Change directories to the `/var/tmp` directory. Enter the following command:

```
# cd /var/tmp
```

Step 2 Enter the following command to start the test:

```
# /opt/sun_install/vts_script brief
```

Running a Test in Full Mode

When run in full mode, the vts_script tests 100 percent of each disk surface. To run the test in full mode:

Step 1 Change directories to the /var/tmp directory. Enter the following command:

```
# cd /var/tmp
```

Step 2 Enter the following command to start the test:

```
# /opt/sun_install/vts_script full
```

vts_script Execution Times

Table 2-5 lists estimated execution times for the VTS scripts on a sampling of Cisco PGW 2200 Softswitch software host platforms.



Note

Actual VTS script execution time on your host platforms differs based on the configuration of your hardware. The size of the disks used in your host platforms has the largest single impact on execution time.

Table 2-5 Sample Estimates of VTS Script Execution Times

| VTS Version | Platform Type, Number of CPUs, CPU speed, Amount of RAM, Number of Disks, Size of Disks | Brief Mode Execution Time (Hours:Minutes:Seconds) | Normal Mode Execution Time (Hours:Minutes:Seconds) | Full Mode Execution Time (Hours:Minutes:Seconds) |
|-------------|---|---|--|--|
| 4.3 | Netra t1 10x, 1, 360 MHz, 64 MB, 2, 9 GB | 0:5:02 | 0:8:19 | 0:36:26 |
| 4.3 | Netra t 112x, 1, 296 MHz, 2 GB, 1, 9 GB | 0:5:42 | 0:10:23 | 0:40:31 |
| 4.3 | Netra t 112x, 2, 440 MHz, 2 GB, 2, 18 GB | 0:3:55 | 0:11:05 | 0:51:44 |
| 6.0 | Netra t 140x, 4, 440 MHz, 4 GB, 2, 18 GB | 0:7:00 | 0:42:00 | 3:10:00 |
| 4.3 | Netra t 140x, 4, 440 MHz, 4 GB, 4, 18 GB | 0:5:23 | 0:15:03 | 0:65:40 |
| 5.1 | Netra 120, 1, 440 MHz, 2 GB, 2, 36 GB | 0:06:09 | 1:16:35 | Estimate unavailable |
| 6.0 | SunFire V120, 1, 648 MHz, 4 GB, 2, 73 GB | 0:08:00 | 0:49:00 | 2:56:00 |
| 5.1 | Netra 20, 4, 900 MHz, 4 GB, 2, 73 GB | 0:09:36 | 2:31:00 | Estimate unavailable |
| 5.1 | SunFire V210, 1, 1340 MHz, 2 GB, 2, 73 GB | 0:00:00 | 0:00:00 | 0:00:00 |
| 6.0 | Netra 240, 2, 1280MHz, 4GB, 2, 146 GB | 0:10:00 | 2:32:00 | 12:29:00 |
| 6.0 | SunFire V40z, 4, 2192 MHz, 16 GB, 2, 73GB | 0:09:00 | 2:30:00 | 12:28:00 |

Table 2-5 Sample Estimates of VTS Script Execution Times (continued)

| VTS Version | Platform Type, Number of CPUs, CPU speed, Amount of RAM, Number of Disks, Size of Disks | Brief Mode Execution Time (Hours:Minutes:Seconds) | Normal Mode Execution Time (Hours:Minutes:Seconds) | Full Mode Execution Time (Hours:Minutes:Seconds) |
|-------------|---|---|--|--|
| 6.0 | Netra 440, 4, 1281 MHz, 8 GB, 4, 146 GB | 0:11:00 | 2:32:00 | 12:30:00 |
| 6.0 | SunFire X4600, 8, 2613 MHz, 16 GB, 4, 73 GB | — | — | — |
| 6.4 | Netra X4200 M2, 2 dual-core CPUs, 2192 MHz, 16GB, 2, 146GB | — | — | — |
| 6.4 | SunFire X4600 M2, 8, 2613 MHz, 16 GB, 4, 73GB | — | — | — |

Removing the VTS Package (CSCOh021)

Use the following procedure to remove the VTS script package from the target system after all tests are complete, all the log files are archived, and the SunVTS software is uninstalled.

Step 1 Type the following command to remove the VTS script package and press **Enter**:

```
# pkgrm CSCOh021
```

Text similar to the following is displayed:

The following package is currently installed:

```
CSCOh021 Media Gateway Controller Solaris 10 test for SPARC/Opteron
(sparc,i386) 3.0(6)
```

```
Do you want to remove this package? [y,n,?,q] y
```

Step 2 Type **y** and press **Enter** to remove this package. Text similar to the following is displayed:

```
## Removing installed package instance <CSCOh021>
```

This package contains scripts which will be executed with super-user permission during the process of removing this package.

```
Do you want to continue with the removal of this package [y,n,?,q]
```

Step 3 Answer **y** and press **Enter** to continue with the installation. Text similar to the following is displayed:

```
## Verifying package <CSCOh021> dependencies in global zone
## Processing package information.
## Executing preremove script.
## Removing pathnames in class <none>
/var/tmp <shared pathname not removed>
/opt/sun_install/vts/vts_script6
/opt/sun_install/vts/vts_script
/opt/sun_install/VTSadmin.file
/opt/sun_install <shared pathname not removed>
## Updating system information.
```

```
Removal of <CSCOh021> was successful.
```

This completes the Sparc-based Solaris 10 Patch cluster installation procedures.

For Cisco PGW 2200 Softswitch Hosts: The Cisco PGW 2200 Softswitch software can now be loaded.

For Cisco HSI: The Cisco HSI software can now be loaded.

For Cisco BAMS: The BAMS software can now be loaded.

Configuring Lights-Out Management (LOM) or the Integrated Lights Out Manager (ILOM)

The LOM and the ILOM are developed by Sun Microsystems for different hardware platforms. They are dedicated systems of hardware and supporting software that allows you manage the Sun servers remotely. See Sun Microsystems documentation for more information.

This section describes the following configuration procedures for the LOM or the ILOM on different platforms:

- [Configuring LOM on Sun Fire V40z Platform, page 2-138](#)
- [Configuring ILOM on Sun Fire X4600 Platform, page 2-141](#)
- [Configuring ILOM on Sun Netra X4200 M2 Platform, page 2-143](#)

Configuring LOM on Sun Fire V40z Platform

Configuring the Service Processor

See the section “Configuring the Service Processor” in Chapter 2 of the Sun Microsystems document, *Sun Fire™ V20z and Sun Fire™ V40z Servers--Installation Guide*. Follow the steps in “Assigning Static SP Network Settings” in this section.

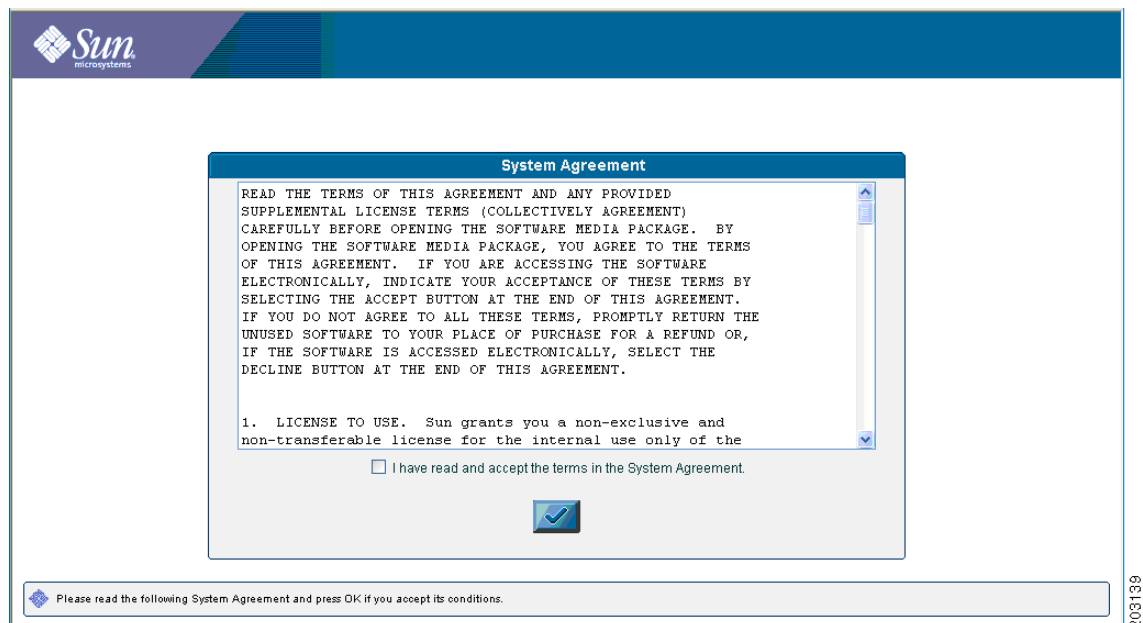
You can find this document on the Sun Microsystems web site at the following URL, <http://docs.sun.com>.

Logging in Service Processor Using Secure HTTP

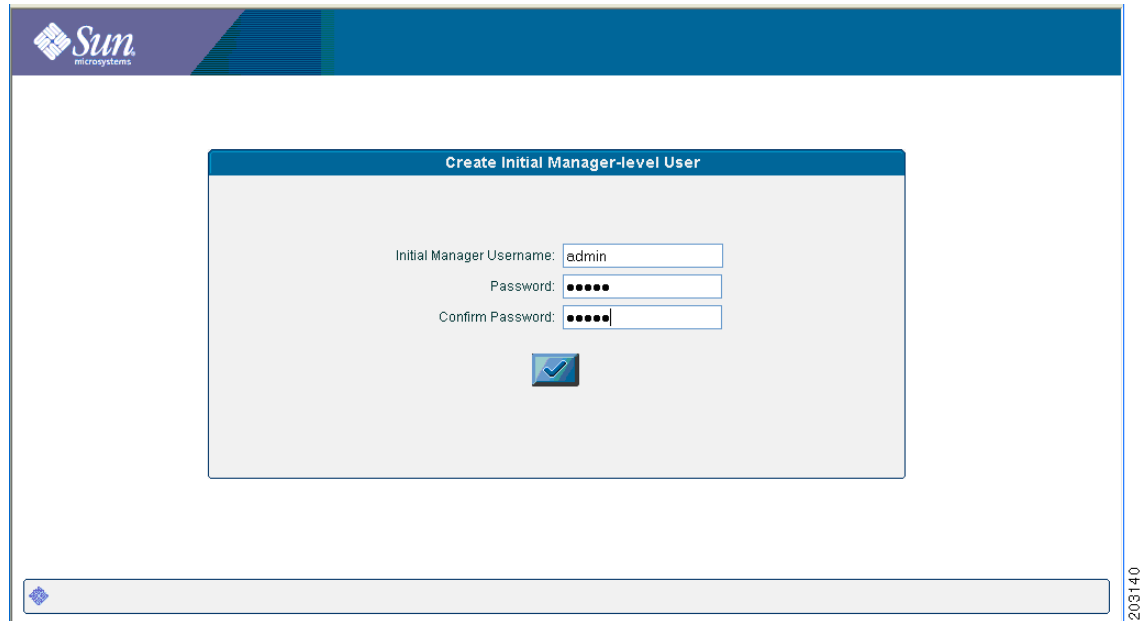
Follow the following procedure to log in SP using secure HTTP. The procedure is based on the Sun Microsystems document, *Sun Fire™ V20z and Sun Fire™ V40z Servers--Installation Guide*.

You can find this document on the Sun Microsystems web site at the following URL, <http://docs.sun.com>.

-
- Step 1** Enter the IP address of the SP in the browser. For example, enter `https://10.10.10.1` in the browser. Press **Enter**.
A window similar to the one in [Figure 2-1](#) is displayed when you log in the SP LOM using secure HTTP for the first time.

Figure 2-1 *System Agreement*

Step 2 Accept the agreement in the [Figure 2-1](#). A window similar to the one in [Figure 2-2](#) is displayed.

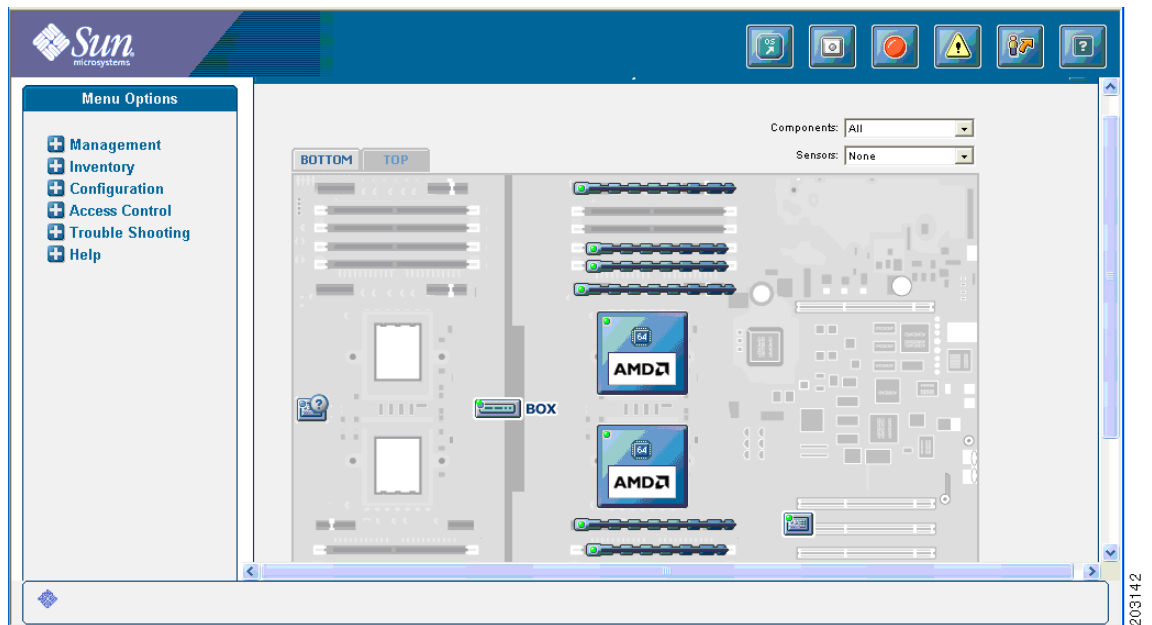
Figure 2-2 *Create Initial Manager-level User*

Step 3 Enter the user ID and password and confirm the password.
The default user ID/password is **admin/admin**.

Step 4 Click the check mark button. A window similar to the one in [Figure 2-3](#) is displayed.

Figure 2-3 Warning Message Window

- Step 5** Check the check box and click **Yes** on the warning message window. A window similar to the one in Figure 2-4 is displayed.

Figure 2-4 LOM Screen

This completes the LOM configuration on Sun Fire V40z platform.

Configuring ILOM on Sun Fire X4600 Platform

Configuring the Static IP Address Using the Command Line Interface (CLI)

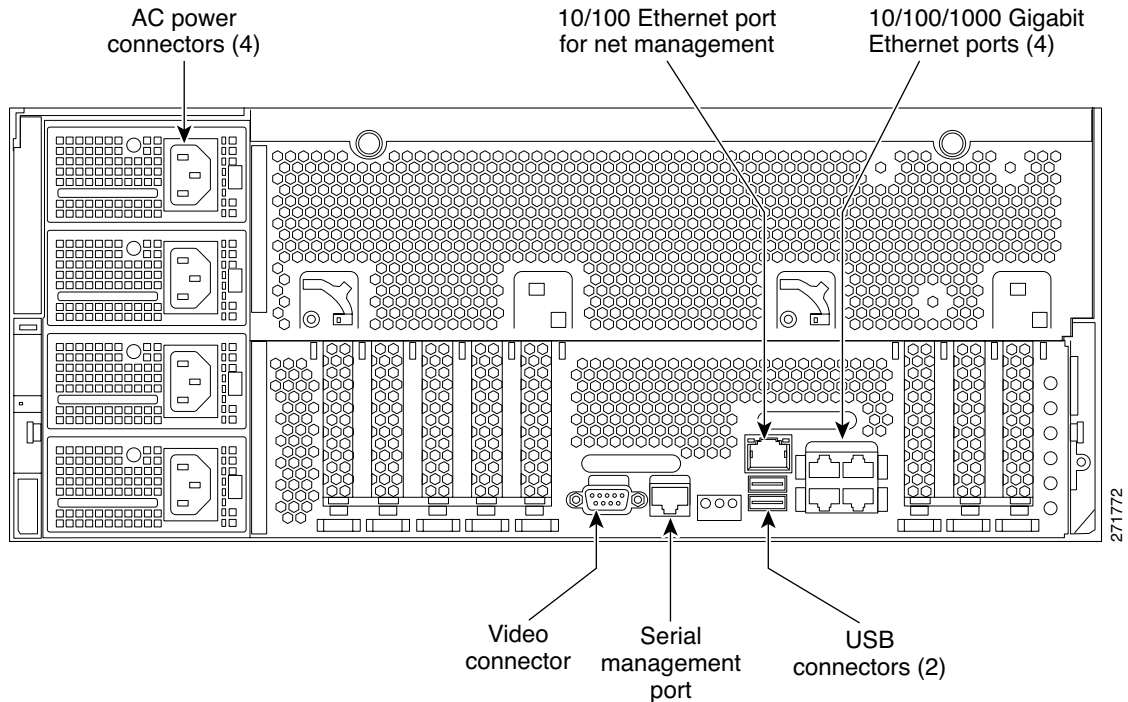
There are several options to connect to the ILOM. Use the following procedure to establish the connection to the ILOM using a serial connection. The following procedure is based on the Sun Microsystems document, *Integrated Lights Out Manager (ILOM) Administration Guide, For ILOM 1.1.1*.

For other connection options, see the Sun Microsystems document, *Sun Fire X4600 and Sun Fire X4600 M2 Server Operating System Installation Guide*. You can find these two documents on Sun Microsystems web site at the following URL, <http://docs.sun.com>.

**Note**

This procedure assumes that you have already completed the hardware setup and have applied standby power to your server.

-
- Step 1** Verify that your terminal, laptop, or terminal server is operational.
- Step 2** Configure the terminal device or the terminal emulation software running on a laptop or a PC to the following settings:
- 8N1: eight data bits, no parity, one stop bit
 - 9600 baud
 - Disable hardware flow control (CTS/RTS)
 - Disable software flow control (XON/XOFF)
- Step 3** Connect a serial cable from the RJ-45 SERIAL MGT port on the server back panel to a terminal device. See [Figure 2-5](#).

Figure 2-5 Sun Fire X4600/X4600 M2 Server Back Panel

- Step 4** Press **Enter** on the terminal device.
The login prompt similar to the following is displayed.

```
SUNSP0003BA84D777 login:
```



Note SUNSP is the prefix which is the same for all SPs. 0003BA84D777 is the Ethernet MAC address of the particular SP. Each SP has a unique MAC address.

- Step 5** Enter the default user name **root**. Enter the default password **changeme**.
The following default command prompt is displayed when you have successfully logged in.
->

- Step 6** Enter the following commands.
The addresses in the commands below are examples.

```
cd /SP/network
set pendingipaddress=10.10.10.1
set pendingipnetmask=255.255.255.0
set pendingipgateway=10.10.10.254
set pendingipdiscovery=static
set commitpending=true
```

- Step 7** Enter the following command and press **Enter**.
You can see if the configuration in Step 1 has taken effect using this command.

```
show /SP/network
```

- Step 8** Connect the Ethernet cable to the 10/100 Ethernet port on the back panel of X4600 server.
See [Figure 2-5](#).

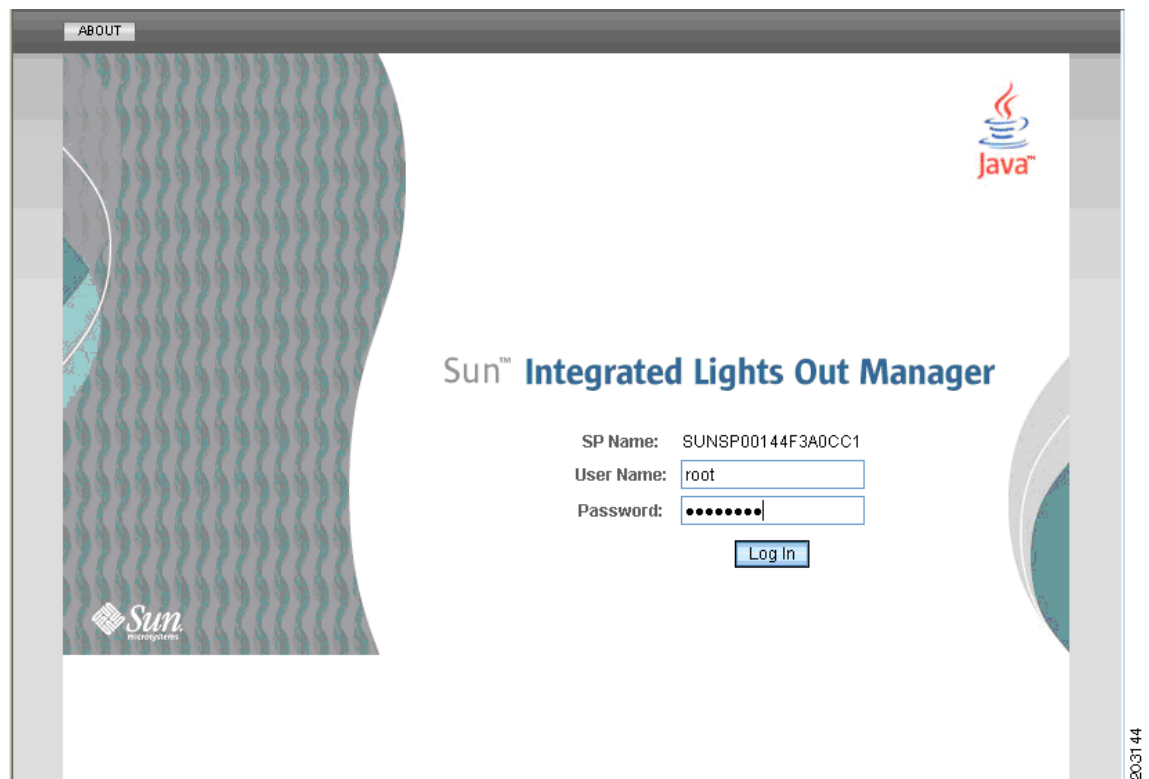
Start ILOM Using Secure HTTP

Follow the following steps to start the ILOM using secure HTTP. These steps are based on Chapter 4, “Using the WebGUI”, of the Sun Microsystems document, *Integrated Lights Out Manager (ILOM) Administration Guide, For ILOM 1.1.1*.

You can find this document on Sun Microsystems web site at the following URL, <http://docs.sun.com>.

- Step 1** Enter the IP address of the SP in the browser. For example, enter `https://10.10.10.1` in the browser. Press **Enter**.
A window similar to [Figure 2-6](#) is displayed.

Figure 2-6 *Integrated Lights Out Manager*



- Step 2** Enter the default user ID/password: **root/changeme**. Click **Log In**.

This completes the ILOM configuration on Sun Fire X4600 platform.

Configuring ILOM on Sun Netra X4200 M2 Platform

In order to use ILOM on the Sun Netra X4200 M2 platform, you must configure the IP address for the SP first. You can use one of the following two methods to configure the IP address:

- [Configuring the IP Address with CLI, page 2-144](#)
- [Configuring the IP Address in BIOS, page 2-144](#)

Configuring the IP Address with CLI

The SP IP address configuration with CLI on Sun Netra X4200 M2 platform is the same as the configuration on Sun Fire X4600 platform. See [Configuring the Static IP Address Using the Command Line Interface \(CLI\)](#), page 2-141.

Configuring the IP Address in BIOS

To configure the IP address for SP on the Sun Netra X4200 M2 platform, perform the following steps:

- Step 1** Connect a monitor and a keyboard to the Sun box.
- Step 2** Start the BIOS setup utility by following these steps:
 - a. Boot the system and pay attention to the prompts on the screen.
 - b. Press **F2** to enter the BIOS setup utility when you see the prompt telling you to do so.
- Step 3** Click the **Advanced** tab in the BIOS setup utility.
You see a screen similar to the one in [Figure 2-7](#).

Figure 2-7 Advanced Tab in BIOS Setup Utility on Sun Netra X4200 M2 Platform



- Step 4** Highlight **IPMI 2.0 Configuration** in the list. Then press **Enter**.
- Step 5** Highlight **LAN Configuration** in the list. Then press **Enter**.
You see a screen similar to the one in [Figure 2-8](#).

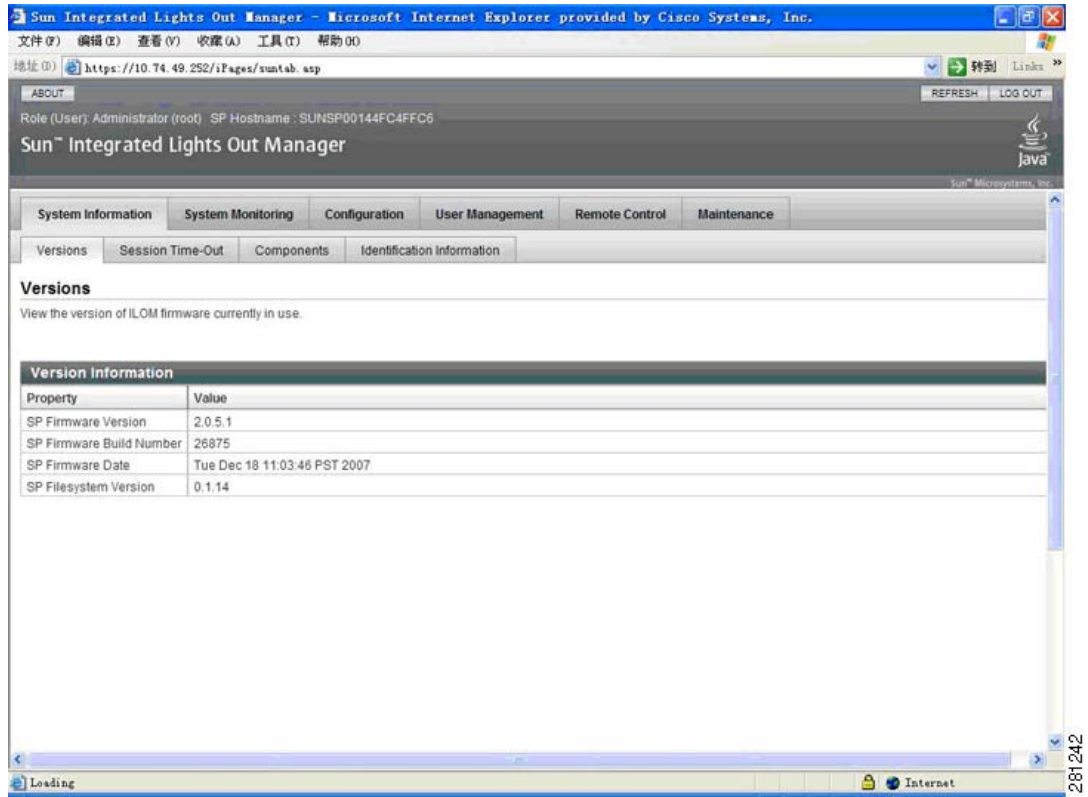
Figure 2-8 LAN Configuration in BIOS Setup Utility on Sun Netra X4200 M2 Platform

| BIOS SETUP UTILITY | |
|---|----------------------|
| Advanced | |
| LAN Configuration. | |
| Channel Number | [01] |
| Channel Number Status: | Channel number is OK |
| IP Assignment | [Static] |
| Current IP address in BMC: | 010.074.049.252 |
| Current MAC address in BMC: | 00.14.4F.C4.FF.C6 |
| Current Subnet Mask in BMC: | 255.255.255.192 |
| Current Gateway in BMC: | 010.074.049.193 |
| Refresh | |
| IP Address | [010.074.049.252] |
| Subnet Mask | [255.255.255.192] |
| Default Gateway | [010.074.049.193] |
| Commit | |
| Update IP, MAC, Subnet mask and Gateway Address from BMC ↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit | |
| v02.58 (C) Copyright 1985-2004, American Megatrends, Inc. | |

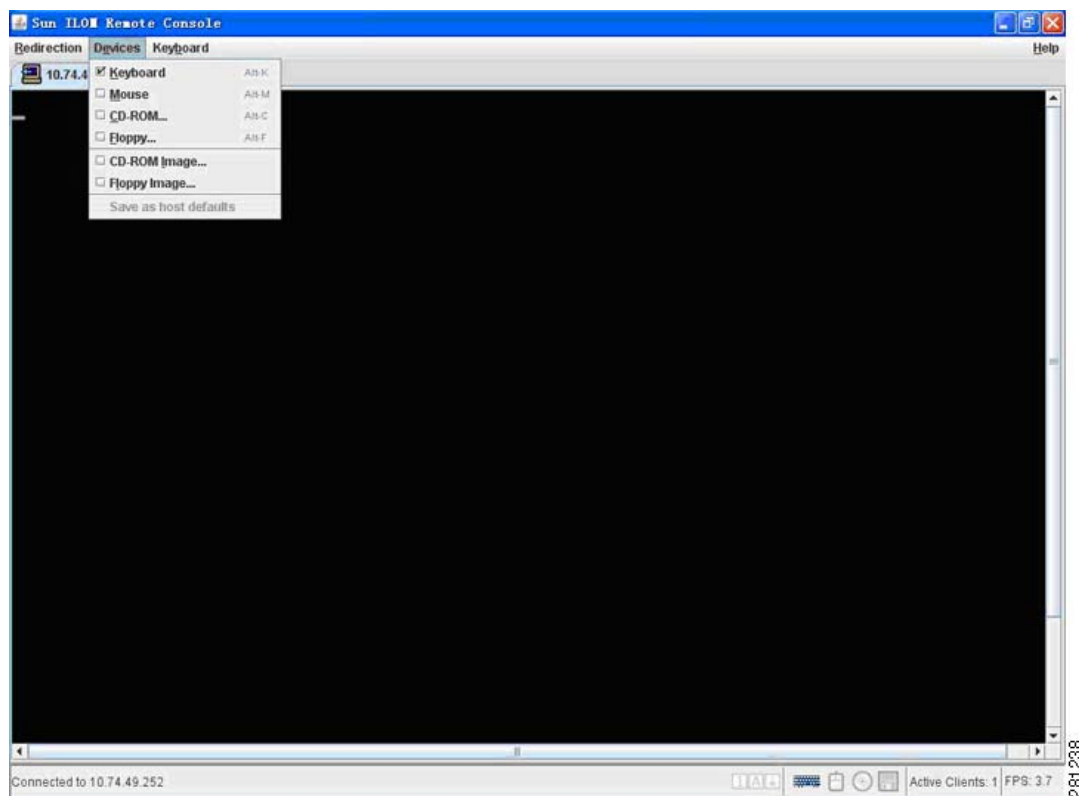
- Step 6** Choose **Static** in the IP Assignment.
- Step 7** Enter the IP address, the subnet mask, and the default gateway.
- Step 8** Select **Commit**.
- Step 9** Select **Exit**.
- Step 10** Highlight the **Save Changes and Exit** option. Then press **Enter**.
- Step 11** Connect an Ethernet cable from the 10/100 Ethernet port for net management on the server back panel to a terminal device. (See [Figure 2-5](#).)

Start ILOM Using Secure HTTP

- Step 1** Enter the IP address of the SP in the browser. For example, enter `https://10.10.10.1` in the browser. Press **Enter**. (See [Figure 2-6](#).)
- Step 2** Enter the default user ID/password: **root/changeme**. Click **Log In**.
You see a screen similar to the one in [Figure 2-9](#).

Figure 2-9 Sun Integrated Lights Out Manager

- Step 3** Click the **Remote Control** tab.
- Step 4** Choose the color settings accordingly:
- 16-bit high-quality color for the fast Ethernet connection
 - 8-bit low-quality color for the normal Ethernet connection
- Step 5** Click **Launch redirection**.
- Step 6** Accept security warnings and hostname mismatch warnings if any.
You see the Sun ILOM remote console as shown in [Figure 2-10](#).

Figure 2-10 Sun ILOM Remote Console

This completes the ILOM configuration on the Sun Netra X4200 M2 platform.

An Example of Using ILOM

Here is a simple example of using ILOM to manage the Sun Netra X4200 M2 platform. You are going to use ILOM to install the Sun Solaris 10 on a Sun Netra X4200 M2 platform. The detailed installation procedure for Sun Solaris 10 operating system is described in the [“Loading the Sun Solaris 10 Operating System” section on page 2-2](#).

Step 1 Open the remote control console of the ILOM. (See [Figure 2-10](#).)



Note

See the [“Configuring the IP Address with CLI” section on page 2-144](#) or the [“Configuring the IP Address in BIOS” section on page 2-144](#) for IP address configuration before using ILOM. See the [“Start ILOM Using Secure HTTP” section on page 2-145](#) for details on using ILOM.

Step 2 Insert the Cisco Solaris 10 Operating System Jumpstart Disk in the CD-ROM.

Step 3 Reboot the system.

You see the system output on your ILOM remote control console as shown in [Figure 2-11](#).

Figure 2-11 System Output on ILOM Remote Control Console

```

American Megatrends
www.ami.com
Sun
microsystems®

AMIBIOS(C) 2006 American Megatrends, Inc.
BIOS Date: 12/17/07 12:35:27, BIOS Build Version : 0ABLG013
CPU : Dual-Core AMD Opteron(tm) Processor 2214 HE
Speed : 2.20 GHz    Count : 4
DRAM Clocking CPU0 Core0/1 = 667 MHz, CPU1 Core0/1 = 667 MHz

Netra X4200 M2, 2 AMD North Bridges, Rev F3
1 AMD 8132 PCI-X 2.0 Controller, Rev B2
1 NVidia CK8-04 PRO SB, 1 NVidia IO-4 Slave Bridge(s)
Board Serial Number   : 1005LCB-0812GB0XJ1
BMC Firmware Revision : 2.0.5.1, BMC IP Address : 10.74.49.252
CPLD Revision         : 5.0
Initializing USB Controllers .. Done.
Press F2 to run Setup (CTRL+E on Remote Keyboard)
Press F8 for BBS POPUP (CTRL+P on Remote Keyboard)
Press F12 to boot from the network (CTRL+N on Remote Keyboard)
System Memory : 16.0 GB

(C) American Megatrends, Inc.
64-0100-006530-00101111-121707-CK8-04-0ABLG013-Y2KC
0060 281237

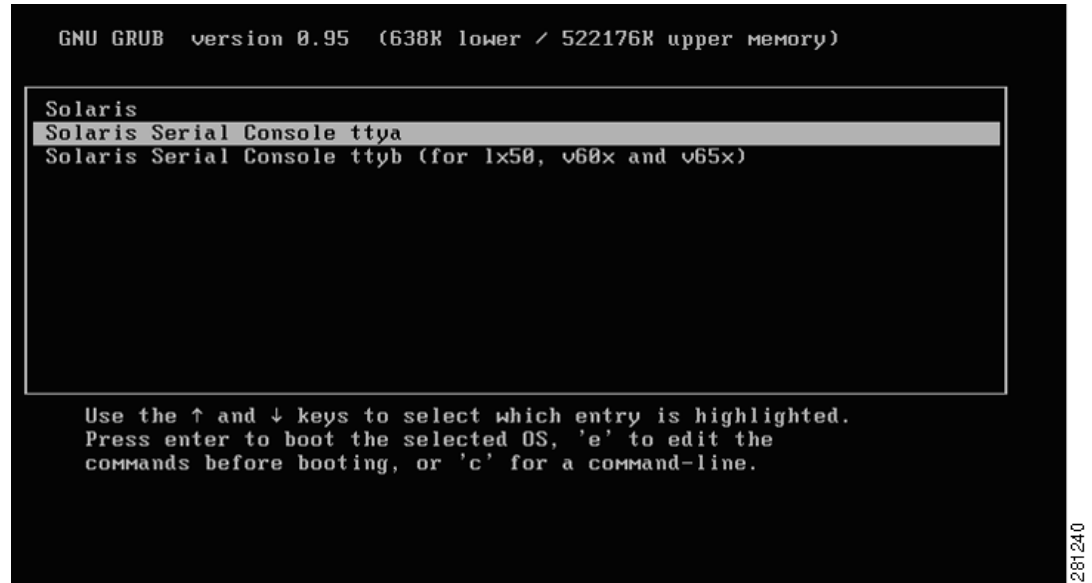
```

Step 4 Choose the desired console device as shown in [Figure 2-12](#).



Note

If you see the system output from a monitor directly connected to the Sun Netra X4200 M2 platform or from a remote control console of ILOM, choose **Solaris**. If you are using a serial console, choose **Solaris Serial Console ttya**.

Figure 2-12 Console Settings of the Sun Solaris 10 Operating System Installation**Note**

See detailed system output of the installation in the [“Loading the Sun Solaris 10 Operating System”](#) section on page 2-2.



CHAPTER 3

Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher

This chapter describes how to install Cisco PGW 2200 Softswitch and later releases of the Cisco PGW 2200 Softswitch software.

This chapter contains the following sections:

- [Before You Start, page 3-1](#)
- [Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases, page 3-3](#)



Note

For information on provisioning the Cisco PGW 2200 Softswitch software, see the following document: *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide*.

Before You Start

Before you start, perform the following steps:

1. Review the hardware and software requirements found in the document *Release Notes for Cisco PGW 2200 Softswitch Release 9.8(1)*.
2. Have your company's internal support and Cisco support contact information readily available so you can get help with the installation if needed. (If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x.)
3. Ensure that you have access to the console port on your Cisco PGW 2200 Softswitch host.
4. Before you begin installing the Cisco PGW 2200 Softswitch software, make sure that the Sun operating system is properly installed. [Table 3-1](#) provides the location of the installation procedure you might require.

Table 3-1 *Installation Overview and Reference Sections*

| Condition | Action |
|---|---|
| The Sun Solaris 10 operating system is not yet installed, you must first install it. | Start with Chapter 2, “Installing the Sun Solaris 10 Operating System.” |
| The Sun Solaris 10 operating system is already installed and you are installing the Cisco PGW 2200 Softswitch software for the first time. | Follow the procedures found in the “Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases” section on page 3-3. |
| The Sun Solaris 10 operating system is already installed and you are upgrading a pre-release version of the Cisco PGW 2200 Softswitch software Release 9.8. | You must reinstall Sun Solaris 10. Start with Chapter 2, “Installing the Sun Solaris 10 Operating System.” |

Cautions, Notes, and Tips



Caution

To prevent the system from running out of disk space during installation and to avoid removal of data files and databases to compensate, you must first verify that there is enough hard disk space to support your intended installation. To get free space, you can delete the following files:

- Unnecessary log files (platform*.log)
- User-generated trace files (*.btr)
- Call detail record (CDR) files (.bin or .csv)
- Old *.tar files
- User-generated toolkit files (in the /var/cust_specific/toolkit directory)



Caution

Be sure to follow the Cisco PGW 2200 Softswitch software installation sequence listed in [“Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases”](#) section on page 3-3.



Note

If you modify any file in the /etc directory, you must reboot the Solaris 10 operating system for the changes to take effect.



Note

Monitor system output frequently for error messages during the installation process and correct any error conditions before continuing with the installation.



Tip

Allow for at least 2 hours to install the Sun Solaris 10 operating system and approximately 1 hour to install the Cisco PGW 2200 Softswitch software.

Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases



Note

Before you begin this procedure, the Solaris 10 operating system and Solaris 10 operating environment should be already installed on your system.



Note

Remove `/usr/ucb` from the path environment variable before the initial installation of the Cisco PGW 2200 Softswitch software. However, if `/usr/ucb` is needed, make sure that it is located in the path variable in the user profile after `/usr/sbin`.



Note

In order for you to enable the SIP Improved Failover Support feature, both Cisco PGW 2200 Softswitch systems must be in the same Virtual LANs (VLANs). A trunk line between the two switches must be connected and configured for the SIP Improved Failover Support feature to work. However, if SIP Improved Failover Support is not required on your system, then the trunk line is not mandatory.

Installing Cisco PGW 2200 Softswitch Software on a Simplex System

To install the Cisco PGW 2200 Softswitch software, complete the following steps:

Step 1 Log in as root.

Step 2 Load the Cisco PGW 2200 Softswitch software CD into the CD-ROM drive.

Step 3 Enter the following commands:

```
# cd /cdrom/cdrom0
# ./install.sh
```

The following prompt is displayed:

```
Use supplied admin file for unattended install? [n] [y,n,?,q]
```

Step 4 Enter **y** to perform an unattended installation. If you answer **n**, you must answer prompts and press **Enter** for each package that is installed.

The following prompt is displayed:

```
Base directory for Toolkit (default /opt/Toolkit) [?,q]
```

Step 5 Press **Enter** to accept the default directory for the Toolkit.

Text similar to the following is displayed:

```
#####
# The CSCOgu000 utilities package must be installed prior to other components      #
# but has not been detected on your system.  This package contains all required system #
# parameters necessary for installing the rest of your software.  If you do not install #
# this package, the installation script will exit.                                #
#####
```

```
Would you like to install it now? [y] [y,n,?,q]
```

Step 6 Enter **y** to install the CSCOgu000 utilities package on this host.

Step 7 The system begins to display various configuration settings for the Cisco PGW 2200 Softswitch software. We recommend that you accept the default values (by pressing **Enter**). You can, however, specify a different user ID and a group ID. If the ID you specify already exists on the system, the existing ID is reused, or you are prompted to enter another ID. The configuration settings are as follows:

```
Base directory for CiscoMGC (default /opt/CiscoMGC) [?,q]
Enter CiscoMGC user name [mgcusr]
Enter CiscoMGC UID [20000]
Enter CiscoMGC group name [mgcgrp]
Enter CiscoMGC GID [20000]
WARNING: setting mode of </etc/init.d/inetinit> to default mode (644)
[mgcgrp] group added
[mgcusr] user added
Modifying /etc/init.d/inetinit
```



Caution No validation is performed on the IDs you enter. If you enter an invalid ID, the utilities package does not add any accounts.

The system returns the following message, stating that the CSCOgu000 utilities package was successfully installed:

```
Installation of <CSCOgu000> was successful.
```

Step 8 If the system indicates that you need to reboot after installing the utilities package, proceed to Step 8a. Otherwise, proceed to Step 9.



Note Rebooting may take approximately 5 minutes.

a. Enter the command displayed on the screen and press **Enter**.

```
# shutdown -y -g0 -i6
```



Note If the command shown on the screen does not work, you can enter the `/usr/sbin/reboot` command to reboot the system.



Note If you have installed the Solaris DiskSuite package (CSCOh023) on your system, the messages below are displayed during system boot. They are normal Solaris DiskSuite startup messages and do not indicate any problem with your system.

```
WARNING force load of misc /md-trans failed
WARNING force load of misc /md-raid failed
WARNING force load of misc /md-hotspares failed
WARNING force load of misc /md-sp failed
```

b. After the reboot finishes, restart `install.sh` to install the remaining packages. To restart `install.sh`, enter the following commands at the `#` prompt and press **Enter**:

```
# cd /cdrom/cdrom0
# ./install.sh
```

The following prompt is displayed:


```
Use supplied admin file for unattended install? [n] [y,n,?,q]
```

c. Enter **y** and press **Enter**.



Note

This procedure can take approximately 1 hour to complete.

Text similar to the following is displayed, showing the packages that were installed:

```
Installation of <CSC0ga000> was successful.
```

```
WARNING: setting mode of </opt/CiscoMGC/.sw_config> to default mode (755)
WARNING: setting mode of </var/spool/cron/crontabs/mgcusr> to default mode (644)
Uncompressing EISUP
Uncompressing ISDNBRI
Uncompressing ISDNIP
Uncompressing ISDNL3
Uncompressing IUA
Uncompressing LI
Uncompressing LMAgent
Uncompressing LogServerd
Uncompressing M3UA
Uncompressing MEGACO
Uncompressing MGCP
Uncompressing QBE_V5
Uncompressing QBE_V6
Uncompressing RA
Uncompressing SIP
Uncompressing SS7
Uncompressing SUA
Uncompressing TCAP
Uncompressing almM
Uncompressing amDmpr
Uncompressing cdrDmpr
Uncompressing cfgM
Installing chk_inv
Installing cisco
Uncompressing diskmonitor
Uncompressing engine.no_smartalloc
Uncompressing engine.smartalloc
Uncompressing foverd
Uncompressing ioChanMgr
Uncompressing lmbase
Installing lmgrd
Uncompressing lmreport
Installing lmutil
Uncompressing measMgr
Uncompressing mmBldCfg
Uncompressing mmSagt
Uncompressing mmdbd
Uncompressing mml
Uncompressing pom
Uncompressing procM
Uncompressing replicator
Uncompressing sagt
Installing libACE.so
Installing libLMAgt.so
Installing libbtsUtil.so
Installing libcmg.so
Installing libconvutil.so
Installing libcxn.so
Installing libda.so
Installing libeng.so
```

```

Installing libengif.so
Installing libhelp.so
Installing libinf.so
Installing libmmdb.so
Installing libpem.so
Installing libpolbase.so
Installing libpolcomp.so
Installing libpolfiles.so
Installing libpolnuman.so
Installing libpolroute.so
Installing libpom.so
Installing libpxe.so
Installing libpxelog.so
Installing libqbe.so
Installing libqbe_v6.so
Installing librds.so
Installing librmg.so
Installing librudp.so
Installing libsa.so
Installing libstlport.so.1
Installing libtcpServer.so
Installing libxe.so
Installing libxml2.so.2
Updating parameters for CiscoMGC
Updating parameters for SW_Layout.cfg
Updating parameters for helpCommands.xsd
Updating parameters for mmlCommands.xml
Updating parameters for mmlLICommands.xml
Updating parameters for licserver
Updating parameters for log_rotate.sh
Updating parameters for reload_lics.sh
Updating parameters for startAudit.sh
Updating parameters for diagdata
Updating parameters for .create_liusr
Updating parameters for .cshrc
Updating parameters for .delete_liusr
Updating parameters for .dump-prov
Updating parameters for .master.cks
Updating parameters for .perf_setup
Updating parameters for backup.sh
Updating parameters for config-db
Updating parameters for config-lib
Updating parameters for config-snmp
Updating parameters for db-bulkcp
Updating parameters for init.tcl
Updating parameters for mgcbackup
Updating parameters for mgcrestore
Updating parameters for reload_lics.mml
Updating parameters for restore.sh
Updating parameters for rmsem.sh
Updating parameters for startAudit.mml
Updating parameters for startLogServer

Installation of <CSC0ga001> was successful.
Modifying /etc/syslog.conf
Updating parameters for .odbc.ini
Updating parameters for backupDb.sh
Updating parameters for liveUpgrade.sh
Updating parameters for restoreDb.sh
Set TOS for timesten replicator
  Untarring TimesTen image in /opt/ttdb-install
  Preparing to install TimesTen in /opt on sh-jingan
  Executing TimesTen installation script...

```

NOTE: Each TimesTen installation is identified by a unique instance name.
The instance name must be a non-null alphanumeric string, not longer
than 255 characters.

Instance name will be 'tt60'.

Please select a product :

- [1] Oracle TimesTen In-Memory Database
- [2] Oracle TimesTen In-Memory Database with Cache Connect to Oracle

Of the three components:

- [1] Client/Server and Data Manager
- [2] Data Manager Only
- [3] Client Only

Installing into /opt/TimesTen/tt60 ...
Creating /opt/TimesTen/tt60 ...
Uncompressing ...

The TimesTen Demo applications can take up to 64 Mbytes of disk space.
Depending on how your system is configured, you may not want to create the
DemoDataStore directory in the default location,
/var/TimesTen/tt60/DemoDataStore

WARNING: It is advised that you do not install the DemoDataStore directory
onto a networked drive. Please see the TimesTen install guide for
more info.

Creating /var/TimesTen/tt60/DemoDataStore ...

NOTE: All installations that replicate to each other must use the same daemon
port number that is set at installation time. The daemon port number can
be verified by running 'ttVersion'.

The default port number is 16001.

The daemon will run on the default port number (16001).

Processing /opt/TimesTen/tt60/PERL/perl.tar ...

System logging appears to be configured correctly.
(TimesTen syslog messages should be recorded in the file '/var/adm/messages')

Installing server components ...
Starting the daemon ...
The tt60 daemon has started successfully.

Installing client components ...
Creating new /var/TimesTen/sys.ttconnect.ini
Extracting 3rd party tools ...
Creating /opt/TimesTen/tt60/doc ...
End of TimesTen installation.
TimesTen installation script returned status 0

Program complete
Restoring default schema.
Sun Microsystems Inc. SunOS 5.10 Generic January 2005

```
Copyright (c) 1996-2006, Oracle. All rights reserved.
Type ? or "help" for help, type "exit" to quit ttIsql.
All commands must end with a semicolon character.
```

```
IInstallation of <CSC0ga002> was successful.
WARNING: setting mode of </etc/srconf> to default mode (755)
Updating parameters for critagt.cnf
Updating parameters for startcia.sh
Updating inittab...
INITTAB is backed up now...
INITTAB has been updated...
Restarting critagt
Stopping critagt now ...
```

```
Stopping critagt...
Done.
```

```
Stopping snmpdm...
Done.
```

```
Stopping brassagt...
Done.
```

```
Stopping brassd...
Done.
```

```
Stopping logagt...
Done.
```

```
Stopping fsagt...
Done.
```

```
Stopping hostagt...
Done.
```

```
Stopping mib2agt...
Done.
Reinitializing CIAgent
```

```
Upgraded version of critagt is now running.
Restore of CIAGENT complete.
```

```
Done.
```

```
Installation of <CSC0ga003> was successful.
Installing /opt/Toolkit/Packages/Packages.tar.gz
Installing /opt/Toolkit/bytocode/XECfg/XECfg.tar.gz
Installing /opt/Toolkit/bytocode/am/am.tar.gz
Installing /opt/Toolkit/bytocode/cdr/cdr.tar.gz
Installing /opt/Toolkit/bytocode/log/Viewer.tar.gz
Installing /opt/Toolkit/bytocode/toolbar/toolbar.tar.gz
Installing /opt/Toolkit/bytocode/tv/tv.tar.gz
Installing /opt/Toolkit/tcl/tcl.tar.gz
Updating parameters for MGC_Setup
Updating parameters for MGC_Toolkit
Updating parameters for init.tcl
Updating parameters for toolbar.sh
Updating parameters for toslaveside
Setting VERSION=9.8(1) in version.dat
```

```
Installation of <CSC0ga004> was successful.
Installing /opt/CiscoMGC/lib/perl5/5.00503.tar.gz
Installing /opt/tibrv/tibco.tar.gz
```

```

Updating parameters for tibco.cfg
Updating parameters for tib4pgw.sh
Updating parameters for tibAdapter.pl
Updating parameters for tibsimulator.pl

Installation of <CSC0ga006> was successful.
Installing ca
Uncompressing callver
Installing get_trc.sh
Installing sim
Uncompressing simWriter
Uncompressing siptool
Installing sp

Installation of <CSC0gt001> was successful.
WARNING: setting mode of </usr/kernel/strmod/amd64> to default mode (755)
OS is 64-bits
sctpmod not loaded
loading sctpmod

Installation of <CSC0gd004> was successful.
Installing migrate_cpp_4_5
Installing migrate_cpp_5_6
Installing migrate_cpp_DB
Updating parameters for XECfgParm.dat
Updating parameters for trigger.dat
Updating parameters for di
Updating parameters for mgcTTmigrate
Updating parameters for migrate
Updating parameters for migrateTKGFile
Installing /opt/CiscoMGC/etc/CONFIG_LIB/migrate_mod.tar.gz
Installing /opt/CiscoMGC/etc/migrate/migrate_scr.tar.gz
Installing new .dat files in /opt/CiscoMGC/etc

Installation of <CSC0gc001> was successful.
Miscellaneous Protocols
#####
##          01          ##          02          ##
#####
## BTNUP_BTNR167 ## IETF_SIP ##
## BTNUP_IUP     ##          ##
## DPNSS_BTNR188 ##          ##
#####

SS7 Protocol Family          PRI Protocol Family
#####                      #####
##          10          ##          20          ##
#####                      #####
## ANSIS7_2K          ## ATT_41459          ##
## ANSIS7_92          ## ATT_41459_C2        ##
## ANSIS7_C2          ## BELL_1268          ##
## ANSIS7_C3          ## BELL_1268_C2        ##
## ANSIS7_E1          ## ETS_300_102        ##
## ANSIS7_STANDARD   ## ETS_300_102_C2      ##
## GR317             ## ETS_300_172        ##
#####                      #####

Q761 Version 1 Protocol Family
#####
##          30          ##          31          ##          32          ##          33          ##
#####
## ETS_300_121          ## Q761_BASE          ## Q761_GERMAN          ## Q761_SINGAPORE      ##
## ETS_300_356          ## Q761_BELG          ## Q761_INDIA          ## Q761_SINGAPORE_C2  ##
## HONGKONG             ## Q761_BELG_97VER    ## Q761_KOREAN          ## Q761_TAIWAN        ##

```

```

## ISUPV1_POLI      ## Q761_CHILE      ## Q761_NEWZEALAND ## Q761_THAILAND    ##
## Q761_ARGENTINA   ## Q761_CHINA      ## Q761_97VER_BASE ## Q761_MALAYSIAN   ##
## Q761_ARGENTINA_C2 ## Q761_CHINA_C2   ## Q761_PERU        ## Q761_99VER_BASE  ##
## Q761_AUSTRAL     ## Q761_DANISH     ## Q761_PORTUGAL    ## Q761_99VER_AUSTRAL_C3 ##
## Q761_AUSTRAL_C2  ##                ##                  ##                  ##
#####

Q761 Version 2 Protocol Family                      Q761 Version 3 Protocol Family
#####
##          40      ##          41      ##          42      ##          50      ##
#####
## ISUPV2_32DIG     ## ISUPV2_JAPAN     ## ISUPV2_VIETNAM   ## ISUPV3         ##
## ISUPV2_AUSTRIAN  ## ISUPV2_JAPAN_C2  ## ISUPV2_AUSTRIAN_C2 ## ISUPV3_UK      ##
## ISUPV2_CZECH     ## ISUPV2_NORWEGIAN ##                ## ISUPV3_UK_C2   ##
## ISUPV2_DUTCH     ## ISUPV2_POLISH    ##                ## ISUPV3_UK_C3   ##
## ISUPV2_FINNISH96 ## ISUPV2_SPANISH   ##                ## ISUPV3_UK_C4   ##
## ISUPV2_FRENCH    ## ISUPV2_SPANISH_C2 ##                ##                ##
## ISUPV2_GERMAN    ## ISUPV2_SWISS     ##                ##                ##
## ISUPV2_ISRAEL    ## ISUPV2_SWISS_C2  ##                ##                ##
#####

Q721 Protocol Family      Q767 Protocol Family
#####
##          60      ##          70      ##          71      ##
#####
## Q721_BASE        ## Q767_AUSTRALIA   ## Q767_MEXICAN     ##
## Q721_BRAZILIAN   ## Q767_BASE        ## Q767_NIGERIAN     ##
## Q721_CHINA       ## Q767_BRAZIL      ## Q767_RUSS         ##
## Q721_FRENCH      ## Q767_COLOMBIA    ## Q767_SINGAPORE    ##
## Q721_PHILLIPINE  ## Q767_GUATEMALA   ## Q767_SPAN         ##
##                ## Q767_INDONESIA    ## Q767_SWED         ##
##                ## Q767_ITAL        ## Q767_TURKISH      ##
##                ## Q767_ITAL_C2     ##                ##
#####

Q931 Protocol Family
#####
##          80      ##
#####
## Q931             ##
## Q931_AUSTRALIA   ##
## Q931_SINGAPORE   ##
#####

Would you like to add a protocol set to your system? [y] [y,n,?,q]

```

Step 9 Select **y** to add a protocol set.



Note

The protocols that you select are specific to your system requirements. These should be decided prior to installation.

The following prompt is displayed:

Please insert a two digit package identifier and type <enter>
If you choose to add all protocols to your system, type "all": <package identifier>

Step 10 You can do either of the following:

- a. Enter **all** and press **Enter** to add all of the protocols to your system. If you do, more disk space is used and the installation process takes more time. Proceed to [Step 12](#).

- b. Select the specific protocol(s) you need from the tables (instead of selecting all) and enter the protocol identifier(s).

The following prompt is displayed:

```
Would you like to add another protocol set to your system? [y] [y,n,?,q]
```

Step 11 Select one of the following options:

- a. If you select **y**, you are prompted by the system to enter another protocol identifier (see [Step 10](#)).
- b. If you select **n**, the system begins installing the protocols you specify, resulting in text similar to the following for each protocol group:

```
Uncompressing ISUPV2_AUSTRIAN.mdo
Uncompressing ISUPV2_AUSTRIAN.so
Uncompressing ISUPV2_CZECH.mdo
Uncompressing ISUPV2_CZECH.so
Uncompressing ISUPV2_DUTCH.mdo
Uncompressing ISUPV2_DUTCH.so
Uncompressing ISUPV2_FINNISH96.mdo
Uncompressing ISUPV2_FINNISH96.so
Uncompressing ISUPV2_FRENCH.mdo
Uncompressing ISUPV2_FRENCH.so
Uncompressing ISUPV2_GERMAN.mdo
Uncompressing ISUPV2_GERMAN.so
Uncompressing ISUPV2_ISRAEL.mdo
Uncompressing ISUPV2_ISRAEL.so

Installation of <CSCO40000> was successful.
```

Once the all of your selected protocol groups have been installed, the system displays text similar to the following:

```
Beginning Check of System Performance Requirements
```

```
Number of CPUs in system 2
Memory size: 2048 Megabytes
The sparcv9 processor operates at 1336 MHz,
```

```
Swap is total: 76384k bytes allocated + 13744k reserved = 90128k used, 5635696k available
Please Verify that you have over 4000000K Available swap
```

```
The tt60 daemon has stopped successfully.
Installation completed Wed Sep 24 03:52:32 EDT 2008
Installation log can be found in /var/adm/MGC_install.log
```



Note During the Cisco PGW 2200 Softswitch software installation, you may see a warning similar to the following one in the system output:
Optimal Performance of this Software Requires 2.048 Gb of Memory!!
Ignore this warning because it is caused by an error in the install.sh script.

Step 12 Enter **eject** and press **Enter** to open the CD-ROM drive door after the installation is completed. Remove the Cisco PGW 2200 Softswitch software CD from the tray.

Step 13 (Optional) Perform the procedure in the [“Installing the Cisco Security Package \(CSCOh020\)”](#) section on [page 3-12](#) to install the Cisco Security Package.

This completes installation of the Cisco PGW 2200 Softswitch software on a simplex host system. If you have a fault-tolerant system, proceed to the [“Installing on a Fault Tolerant System”](#) section on [page 3-17](#).

Otherwise, proceed to the next step.

- Step 14** You can now begin configuring your Cisco PGW 2200 Softswitch software in the [“Using the Cisco MGC Environment Configuration Tool”](#) section on page 4-8.

**Note**

During installation of the Cisco PGW 2200 Softswitch software, the system is automatically installed, using a standard performance profile satisfactory for both nailed and switched solutions.

See the *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide* for information on provisioning the Cisco PGW 2200 Softswitch software on a simplex system.

If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x.

Installing the Cisco Security Package (CSCOh020)

Perform the following procedure to install the Cisco Security package (CSCOh020):

- Step 1** If you are using the CD-ROM, load the Cisco Solaris 10 Operating Environment CD into the CD-ROM drive. Enter the following command:

```
# pkgadd -d /cdrom/cdrom0/CSCOh020.pkg
```

Text similar to the following is displayed:

The following packages are available:

```
1 CSCOh020      Media Gateway Controller Security package compatible with Solaris 10
                  (sparc, i386) 3.0(6)
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:

**Note**

You can also download the Cisco Security package (CSCOh020) from Cisco.com. For example, download the CSCOh020 package to the /opt/SW folder on the platform and use the command, `pkgadd -d /opt/SW/CSCOh020.pkg`. Make sure you download the platform-specific package for your platform (Sparc-based or Opteron-based).

- Step 2** Press **Enter** to select the default value. Text similar to the following is displayed:

```
Processing package instance <CSCOh020> from </var/tmp/CSCOh020.pkg>
```

```
Media Gateway Controller Security package compatible with Solaris 10(sparc, i386) 3.0(6)
```

This appears to be an attempt to install the same architecture and version of a package which is already installed. This installation will attempt to overwrite this package.

```
Cisco Systems, Inc.
```

```
## Executing checkinstall script.
```

```
CSCOh020 checkinstall log file at /var/tmp/CSCOh020.checkinstall.log
```

```
Platform is i86pc
```

```
This machine is running Solaris 5.10
```

```
Using </opt/sun_install> as the package base directory.
```

```
## Processing package information.
```

```
## Processing system information.
```



```

    4 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

```

This package contains scripts which will be executed with super-user permission during the process of installing this package.

Do you want to continue with the installation of <CSCOh020> [y,n,?]

Step 3 Enter **y** and press **Enter** to continue. Text similar to the following is displayed:

```

Installing Media Gateway Controller Security package compatible with Solaris 10 as
<CSCOh020>

```

```

## Executing preinstall script.
Cisco MGC software or an adjunct was found.
## Installing part 1 of 1.
[ verifying class <none> ]
## Executing postinstall script.
You must now run the install security script

```

Log in as root

```
cd /opt/sun_install
```

and run the command:

```
./CiscoSec.sh install /tmp/security.log
```

The machine will have to be rebooted
after the script is run

Installation of <CSCOh020> was successful.

Step 4 Change directory to /opt/sun_install and run the install script by entering the following commands:

```

# cd /opt/sun_install
# ./CiscoSec.sh install /tmp/security.log

```

Text similar to the following is displayed:

Output will be logged in install

You are running as root - Good...

Operating System: SunOS 5.10

For security reasons, root access from outside the console
is disabled by default.

Do you want to allow remote root logins? (y/n) [N]

Step 5 If you want to allow remote users to log in as root, perform the following steps. If you do not want to allow remote users to log in as root, enter **n** and press **Enter**, then proceed to Step 6.

a. Type **y** and press **Enter**.

Text similar to the following is displayed:

```

Allowing remote (ie. non-console) root logins
may pose a serious security risk.
Are you sure you want to allow remote root logins? (y/n) [N]

```

b. Type **y** and press **Enter** to continue.

Text similar to the following is displayed:

```
For security reasons, ftp access is disabled by default.
Do you want to allow ftp access? (y/n) [N]
```

Step 6 If you want to allow ftp access, perform the following steps. If you do not want to allow ftp access, enter **n** and press **Enter**, then proceed to Step 7.

- a. Type **y** and press **Enter**.

Text similar to the following is displayed:

```
Allowing ftp access may pose a serious security risk.
Are you sure you want to allow ftp access? (y/n) [N]
```

- b. Type **y** and press **Enter** to continue.

Text similar to the following is displayed:

```
For security reasons, telnet access is disabled by default.
Do you want to allow telnet access? (y/n) [N]
```

Step 7 If you want to allow telnet access, perform the following steps. If you do not want to allow telnet access, enter **n** and press **Enter**, then proceed to Step 8.

- a. Type **y** and press **Enter**.

Text similar to the following is displayed:

```
Allowing telnet access may pose a serious security risk.
Are you sure you want to allow telnet access? (y/n) [N]
```

- b. Type **y** and press **Enter** to continue.

Text similar to the following is displayed:

```
For security reasons, the sudo command is disabled by default.
Do you want to enable sudo? (y/n) [N]
```

Step 8 If you want to enable Sudo, perform the following steps. If you do not want to enable Sudo, enter **n** and press **Enter**, then proceed to Step 9.

- a. Type **y** and press **Enter**.

Text similar to the following is displayed:

```
Enabling sudo may pose a serious security risk.
Are you sure you want to enable sudo? (y/n) [N]
```

- b. Type **y** and press **Enter** to continue.

Text similar to the following is displayed:

```
The user will still need to edit the sudoers file
to allow specific users to run the command
```



Note

To complete enabling Sudo, you must also complete the [“Enabling Sudo”](#) section after installing the Cisco Security Package.

```
*****
*****
**                                     **
** NOTE!! The machine must be REBOOTED in order **
**           for these changes to take effect      **
**                                     **
*****
```

```
*****
Do you want to reboot the machine now? (y/n) [N]
```

Step 9 Enter **y** and press **Enter** to reboot the system and reset your security settings.

Step 10 Enter **eject** and press **Enter** to open the CD-ROM drive door once the system has completed the reboot. Remove the Cisco PGW 2200 Softswitch software CD from the tray.

This completes installation of the Cisco Security package on a simplex host system. If you have a fault-tolerant system, proceed to the “[Installing on a Fault Tolerant System](#)” section on page 3-17.

Otherwise, proceed to the next step.



Note

If the installation of this package returns an error code of 1 for any of the associated files, you can ignore the error. Those files have encountered an error, but the installation is correct.

Step 11 You can now begin configuring your Cisco PGW 2200 Softswitch software in the “[Using the Cisco MGC Environment Configuration Tool](#)” section on page 4-8.

Enabling Sudo

The Sudo application allows you to run programs with the security privileges of another user such as the superuser. Follow these steps to enable Sudo on the Cisco PGW 2200 Softswitch:

Step 1 Enter **ln -s /opt/sfw/bin/sudo /usr/bin/sudo** and press **Enter**.

Step 2 Enter **ln -s /opt/sfw/etc/sudoers /etc/sudoers** and press **Enter**.



Note

You must also have enabled sudo in step 8 of the [Installing the Cisco Security Package \(CSCOh020\)](#) section.

If you need to make further changes to the sudo policy, edit the policy in /etc/sudoers.

Installing the License File

To manage licenses, Cisco PGW 2200 Softswitch provides license files that are stored in a directory where Cisco PGW 2200 Softswitch obtains the required license information. Cisco PGW 2200 Softswitch uses the license file to enforce the capacity and features available. For more information about License features on the Cisco PGW 2200 Softswitch, see the *Licensing Features for the PGW 2200* at:

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/feature/module/9.7_3_/FlexLM.html



Note

You must install the license file on both the active and the standby Cisco PGW 2200 Softswitch for it to function properly.

Installing the License File if the Cisco PGW 2200 Softswitch is NOT Running

If the Cisco PGW 2200 Softswitch is **not** in a running state, perform the following steps.

-
- Step 1** Save the license file (.lic) to a temporary directory on your hard disk.
 - Step 2** Copy the license file to the /opt/CiscoMGC/license directory of the Cisco PGW 2200 Softswitch. Licenses are cumulative, so there can be multiple license files of the same type.
 - Step 3** Log in as **root**.
 - Step 4** Enter the following command to start the Cisco PGW 2200 Softswitch:

```
# /etc/init.d/CiscoMGC start
```

The license file loads automatically.

Installing the License File if the Cisco PGW 2200 Softswitch is Running

If the Cisco PGW 2200 Softswitch is in a running state, perform the following steps.

-
- Step 1** Save the license file (.lic) to a temporary directory on your hard disk.
 - Step 2** Copy the license file(s) to the /opt/CiscoMGC/license directory of the Cisco PGW 2200 Softswitch. Licenses are cumulative, so there can be multiple license files of the same type.
 - Step 3** Log in as **mgcusr**.



Tip

For more information about managing MML users, see [Using the Cisco MGC Environment Configuration Tool, page 4-8](#).

- Step 4** Go to the /opt/CiscoMGC/bin directory of the Cisco PGW 2200 Softswitch.
- Step 5** Run the **reload_lics.sh** script.

The following is a sample out put from the script:

```
Copyright © 1998-2002, Cisco Systems, Inc.
MGC-01 - Media Gateway Controller 2006-05-18 08:07:37.051 EDT M COMPLD
''LMAgent:

-----
PGW License 9.7 permanent
-----

Interface Name  Entitled  Provisioned
SS7Interface      Y          Y
PRIInterface      Y          N
PBXInterface      Y          N
INAPInterface     Y          N
LIInterface       Y          N/A
-----

Configure TDM Ports  Entitled  Provisioned  Available
Call Control        1500      1384         116
-----

Run Time License    Entitled
SIP                  1500
H323                 1500
-----''
```

Installing on a Fault Tolerant System

**Caution**

To ensure the successful installation of a fault tolerant configuration, you must provision the software for the active Cisco PGW 2200 Softswitch host after [Step 10](#) of the “[Installing the Cisco Security Package \(CSCOh020\)](#)” section on [page 3-12](#), before proceeding to [Step 1](#), below. See the *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide* for information about the following:

- Provisioning the active Cisco PGW 2200 Softswitch host
- Procedures for converting the active Cisco PGW 2200 Softswitch host to the standby host

Only one active provisioning session is permitted, and provisioning is permitted only on the active Cisco PGW 2200 Softswitch host.

Exit the provisioning session on the active host and continue to [Step 1](#), below. If the software is not provisioned after it is installed on the active Cisco PGW 2200 Softswitch host, the standby host is not synchronized with the active host. As a result, a forced switchover might cause the switchover to fail.

To install the Cisco PGW 2200 Softswitch software on a fault-tolerant system (one with two Cisco PGW 2200 Softswitch hosts and Cisco SS7 interfaces), complete the following steps.

**Note**

The MGC_install.log and the MGC_pkgerrors.log are stored in the /var/adm directory.

-
- Step 1** Continuing from [Step 10](#) of the “[Installing the Cisco Security Package \(CSCOh020\)](#)” section on [page 3-12](#), exit server 1.
- Step 2** Log on to server 2 as root and go to the # prompt.
- Step 3** Load the Cisco PGW 2200 Softswitch software CD into the server 2 CD-ROM drive.
- Step 4** Follow the instructions in [Step 3](#) through [Step 12](#) of the “[Installing Cisco PGW 2200 Softswitch Software on a Simplex System](#)” section on [page 3-3](#).
- Step 5** Follow the instructions in [Step 1](#) through [Step 10](#) of the “[Installing the Cisco Security Package \(CSCOh020\)](#)” section on [page 3-12](#).
- Step 6** Install the license using the instructions in the “[Installing the License File](#)” section on [page 3-15](#).
- Step 7** Configure the execution environment parameters and database replication for fault tolerant systems described in [Appendix A](#), “[XECfgParm.dat File Parameters](#).”
-

This completes the installation of the Cisco PGW 2200 Softswitch software. Continue to the “[Using the Cisco MGC Environment Configuration Tool](#)” section on [page 4-8](#) to configure groups and users. If you have questions or need assistance, see the “[Obtaining Documentation and Submitting a Service Request](#)” section on [page x](#).

**Note**

Always check cisco.com (<http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>) to ensure that you have the latest required patch version released by Cisco on your system, CD, or file system (if downloaded previously from cisco.com).



CHAPTER 4

Configuring the Cisco PGW 2200 Softswitch Software

This chapter describes how to configure Release 9.8 of the Cisco PGW 2200 Softswitch software.

Quick Guide to Configuring the Cisco PGW 2200 Softswitch Software



Note

The Cisco PGW 2200 Softswitch software files and processes are located in the `/opt/CiscoMGC` directory.

The following table provides an overview of the Cisco PGW 2200 Softswitch software configuration.

Table 4-1 *Quick Guide to Configuring the Cisco PGW 2200 Softswitch Software*

| Task | Detailed Procedures |
|---|---------------------|
| Before You Start | on page 4-2 |
| Initial Cisco PGW 2200 Softswitch Software Configuration | on page 4-4 |
| – Using the Cisco MGC Environment Configuration Tool | on page 4-8 |
| Using the Cisco MGC Environment Configuration Tool | on page 4-8 |
| – Verifying the mgcgrp Group | on page 4-11 |
| – Adding a User with Full MML Privileges | on page 4-11 |
| – Adding a User with Minimal MML Privileges | on page 4-12 |
| Configuring SNMP Support Resources | on page 4-13 |
| – Migrating the SNMP Configuration to a More Secure Environment (for Cisco PGW 2200 Softswitch Release 9.3(2) or Later) | on page 4-14 |

Table 4-1 Quick Guide to Configuring the Cisco PGW 2200 Softswitch Software (continued)

| Task | Detailed Procedures |
|---|---------------------|
| Configuring the Execution Environment | on page 4-25 |
| – Changing XECfgParm.dat File Parameters | on page 4-26 |
| – Changing XECfgParm.dat File Parameters in a Running Fault Tolerant System | on page 4-27 |
| – Configuring Basic System Information | on page 4-28 |
| – Specifying IP Addresses | on page 4-30 |
| – Configuring Engine Parameters | on page 4-32 |
| – Enabling Call Screening | on page 4-34 |
| – Configuring Call Detail Record File Output | on page 4-35 |
| – Configuring the Clearing Location and Default Location Parameters | on page 4-36 |
| – Configuring Switchover | on page 4-39 |
| – Initializing the Provisioning Object Manager | on page 4-41 |
| Configuring SCP Queries | on page 4-42 |
| – Before You Start | on page 4-43 |
| – Configuring the trigger.dat File Attributes | on page 4-43 |
| Initializing the Call Screening Database | on page 4-82 |
| – .odbc.ini File Information | on page 4-83 |
| – Setting Up Replication | on page 4-83 |
| – Verifying Database Replication | on page 4-86 |
| – Troubleshooting the Main Memory Database Replication | on page 4-87 |
| Configuring Cisco ITP-Ls | on page 4-89 |
| Configuring Disk Monitor During Initial Software Configuration | on page 4-89 |
| Configuring the Data Dumper | on page 4-90 |
| Configuring the Data Dumper to Support Cisco BAMS | on page 4-92 |

**Note**

For further information on configuring the Cisco PGW 2200 Softswitch software, see the *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide*.

Before You Start

Before you start, verify the following:

- Have your company's internal support and Cisco support contact information readily available so you can get help with the installation if needed. (If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x of the Cisco support contact information.)
- Ensure that you have access to the console port on your Cisco PGW 2200 Softswitch host.

**Caution**

The Cisco PGW 2200 Softswitch software is case-sensitive. Ensure that you enter parameter names correctly, or the maximum number of configurations will not be modified.

Software Directory Structure

Table 4-2 shows the Cisco PGW 2200 Softswitch software directory structure.

**Caution**

Do not edit any .dat files (except for the XECfgParm.dat and trigger.dat files). Use MML or the GUI provisioning tool to make changes to your configuration. In addition, only make changes to the call screening database by using MML or the GUI provisioning tool.

Table 4-2 Software Directory Structure

| Directory | Contents |
|----------------------------------|---|
| /etc/init.d | Control scripts, including scripts used to stop and start the software. |
| /opt/CiscoMGC | Root location of base software installation. |
| /opt/CiscoMGC/bin | Stores executable Cisco PGW 2200 Softswitch system files. |
| /opt/CiscoMGC/license | Cisco PGW 2200 Softswitch license files. |
| /opt/CiscoMGC/local | User accounts home directory. |
| /opt/CiscoMGC/etc | Contains active configuration data files and the configuration library. |
| /opt/CiscoMGC/etc/CONFIG_LIB | Library of all configuration data files. |
| /opt/CiscoMGC/etc/CONFIG_LIB/new | The initial startup configuration supplied with a new installation of the software. |
| /opt/CiscoMGC/etc/active_link | The active running configuration that has been committed or deployed. |
| /opt/CiscoMGC/etc/prov_link | The latest provisioned configuration that has not yet been committed or deployed. |
| /opt/CiscoMGC/etc/cust_specific | Location of configurations that have been exported using the prov-exp MML command. |
| /opt/CiscoMGC/lib | System software libraries of *.so object files (including protocol and system libraries). |
| /opt/CiscoMGC/snmp | SNMP support directory. MIBs are named *.my and are in ASN.1 syntax. |

Table 4-2 Software Directory Structure (continued)

| Directory | Contents |
|-------------------------|---|
| /opt/CiscoMGC/var | Contains the log, spool, trace, and Coredump file directories. |
| /opt/CiscoMGC/var/log | Default platform informational and error logs. |
| /opt/CiscoMGC/var/spool | Spool files for CDRs and measurements. |
| /opt/CiscoMGC/var/trace | Location of trace files created by using the sta-trc MML command. |
| /opt/SW | Cisco PGW 2200 Softswitch software patch files. Note This directory is not created by the default Cisco PGW 2200 Softswitch installation, but is recommended for storing Cisco PGW 2200 Softswitch patch files. |
| /opt/TimesTen | Call screening database files. Do not edit the database. |
| /opt/Toolkit | The Toolkit application files. |
| /opt/sun_install | Contains the scripts used to install Solaris patches. |

Initial Cisco PGW 2200 Softswitch Software Configuration

The following required configuration parameters in the XECfgParm.dat file (see [Table 4-3](#)) are critical to bringing up the system. For a complete list of the parameters found in the XECfgParm.dat file and how they are used by the Cisco PGW 2200 Softswitch, see [Appendix A, “XECfgParm.dat File Parameters.”](#)



Note

The XECfgParm.dat file must be provisioned with the installation of every system. The file consists of set of parameters that are necessary to bring up the system. This set of required parameters is configured via the MGC Environment Configuration Tool.

When you exit the MGC Environment Configuration Tool, the slave file is sent via FTP to the appropriate system.

During initial Cisco PGW 2200 Softswitch configuration, we recommend that you put an initial configuration on the **active host**, otherwise both the active and standby hosts will remain in the stopped state. Do not start the standby host if the active host is not yet provisioned.

When the initial configuration on the active host is deployed, you must change the **pom.dataSync** parameter to true in the XECfgParm.dat file in the **standby host**. After setting this parameter to true, you can start the Cisco PGW 2200 Softswitch software on the standby host. As the Cisco PGW 2200 Softswitch software comes up, the data on the standby host is synchronized with the data on the active host. Initiate switchover to bring the active host to the standby state.

To accommodate failover conditions where the current active host can become the standby host, you must also set the **pom.dataSync** parameter to true on the **current active host**.

When upgrading the Cisco PGW 2200 Softswitch software: You must set the **pom.dataSync** parameter to false on the **current active host** in order to preserve configuration files.

Table 4-3 shows the Cisco PGW 2200 Softswitch configuration parameters.

Table 4-3 Configuration Parameters

| Parameter | Description |
|--|--|
| *.CPUTimerInterval | <p>Samples the frequency of CPU utilization.</p> <p>Prior to Release 9.4(1), this parameter must be set to 0 during the initial configuration of any platform with a single CPU (including Sun Netra t 100/105, Sun Netra V 120, and Sun Netra 120).</p> <p>Default: 3000 msec (3 seconds)</p> <p>Note During the startup of the Cisco PGW 2200 Softswitch software, this parameter will be set automatically to tune the system for optimal performance.</p> <p>For Release 9.4(1) and later, this parameter is set automatically when you specify a Cisco PGW 2200 Softswitch type in the engine.SysVirtualSwitch parameter. Any attempt to modify this parameter is overwritten.</p> |
| *.desiredPlatformState | Specifies the operating mode of the Cisco PGW 2200 Softswitch. |
| *.IP_Addr1 through IP_Addr4 | <p>Specify the IP addresses being used by the system.</p> <p>Note that *.IP_AddrLocalA, and *.IP_AddrLocal2 are the same as *.IP_Addr1, and *.IP_Addr2, respectively.</p> |
| *.IP_AddrLocalA and *.IP_AddrLocalB | The local IP addresses of the Cisco PGW 2200 Softswitch. These addresses should match the value of *.IP_AddrLocalA and *.IP_AddrLocalB. |
| *.IP_AddrPeerA and *.IP_AddrPeerB | The IP address of Cisco PGW 2200 Softswitch peers used for failover. |
| *.MGC_CDR_NODE_ID | The Cisco PGW 2200 Softswitch System ID used for Call Data Records (CDRs). |
| *.ownTranspathId | <p>Contains a unique number that identifies the Cisco PGW 2200 Softswitch's virtual switch controller within the ASN (Auxiliary Signaling Network).</p> <p>Default: 01</p> |
| *.peerTranspathId | <p>Contains a unique number that identifies a peer virtual switch controller within the ASN (Auxiliary Signaling Network).</p> <p>Default: 02</p> |
| *.platformId | <p>Identifies the Cisco PGW 2200 Softswitch platform. The default value 1 applies to Fault Tolerant mode and Standalone mode.</p> <p>Default: 1</p> |

Table 4-3 Configuration Parameters (continued)

| Parameter | Description |
|--|--|
| *.SysConnectDataAccess | <p>Controls whether data access is enabled or disabled (if the engine attempts to connect to the MMDB or to call screening database at startup).</p> <p>Values:</p> <ul style="list-style-type: none"> true = connect to MMDB or call screening database false = do not connect to MMDB or call screening database <p>Default: false</p> <p>Note This parameter must be set to true in calling scenarios where Euro-LNP, A Number Screening, or other features requiring real time database access are required. Otherwise, it can remain false for an increase in the available system memory usable for call processing.</p> |
| *.TCAP.avgInvokePerDialog | <p>Specifies the maximum number of outgoing Invoke messages per dialog.</p> <p>Values: 1-10</p> <p>Default: 1</p> |
| *.TCAP.maxSsnNum | <p>Specifies the maximum number of local Subsystem Numbers (SSNs) supported by the Cisco PGW 2200 Softswitch.</p> <p>Values: 1-10</p> <p>Default: 1</p> |
| *.transpathId | <p>A unique number that identifies each virtual switch controller within the ASN (Auxiliary Signaling Network).</p> <p>Default: 01</p> |
| *.Virtual_IP_Addr1 through *.Virtual_IP_Addr2 | <p>Specify virtual IP addresses for the Cisco PGW 2200 Softswitch that are used for SIP Failover Support.</p> |

Table 4-3 Configuration Parameters (continued)

| Parameter | Description |
|-------------------------|--|
| engine.SysVirtualSwitch | <p>Indicates whether the Cisco PGW 2200 Softswitch host functions as a signaling controller or a virtual switch controller.</p> <p>Values:</p> <ul style="list-style-type: none"> • 0—Signaling controller (nailed trunks, no auditing is initiated) • 1—Virtual switch controller (switched trunks) <p>Default: 0</p> <p>Note During the startup of the Cisco PGW 2200 Softswitch software, this parameter is be set automatically to tune the system for optimal performance.</p> <p>Note For Release 9.4(1) and later, the values of the parameters listed below are automatically set based on the Cisco PGW 2200 Softswitch type you select, to maximize performance for that configuration. Any attempt to change the values of these parameters is overwritten.</p> <p>engine.SysMdlMemoryReduction engine.CALL_MEM_BLOCK_SIZE engine.CALL_MEM_CHUNK_SIZE *.CPUTimerInterval *.numberOfThreads</p> |
| pom.dataSync | <p>Indicates that the Provisioning Object Manager (POM) should synchronize the provisioning data at startup.</p> <p>Values:</p> <ul style="list-style-type: none"> • True— POM does not synchronize provisioning data at startup. • False— POM synchronizes provisioning data at startup. <p>Default: False</p> |

Parameters Required for Initial Setup

The following table lists the parameter values that must be defined during the initial installation.



Note

These parameters are located at the top of the XECfgParm.dat file, thus making it easier to find the parameters required for initial setup.

Table 4-4 Parameters Required for Initial Setup

| Item | Parameter Name | Default Value | Changed Values |
|------|-----------------------------|-------------------------|---|
| 1 | *.platformId | 1 | 2, if slave |
| 2 | *.transpathId | 01 | 02, if standby |
| 3 | *.ownTranspathId | 01 | 02, if standby |
| 4 | *.peerTranspathId | 02 | 01, if standby |
| 5 | *.MGC_CDR_NODE_ID | MGC-CDR-NO DE-STRING | System Id for Call Data Records (CDRs) |
| 6 | *.desiredPlatformState | Standalone | Master,slave,standalone |
| 7 | *.SysConnectDataAccess | False | True |
| 8 | *.IP_AddrLocalA | 0.0.0.0 | Ifconfig(bge0) |
| 9 | *.IP_AddrLocalB | 0.0.0.0 | Ifconfig(bge1) |
| 10 | *.IP_AddrPeerA | 0.0.0.0 | Slave(ifconfig(bge0)) |
| 11 | *.IP_AddrPeerB | 0.0.0.0 | Slave(ifconfig(bge1)) |
| 12 | *.IP_Addr1 | 0.0.0.0 | Ifconfig(bge0) |
| 13 | *.IP_Addr2 | 0.0.0.0 | Ifconfig(bge1) |
| 14 | *.IP_Addr3 | 0.0.0.0 | Ifconfig(bge2) |
| 15 | *.IP_Addr4 | 0.0.0.0 | Ifconfig(bge3) |
| 16 | StPort | 0 | 7000, if Master or 7001 if Slave |
| 17 | Engine.SysVirtualSwitch | 0 | 1 for Switched solution |
| 18 | Foverd.ipLocalPortA (con 1) | 0 | 1051, if Master or 1052 if Slave |
| 19 | Foverd.ipPeerPortA (con 1) | 0 | 1052, if Master or 1051 if Slave |
| 20 | Foverd.ipLocalPortA (con 2) | 0 | 1053, if Master or 1054 if Slave |
| 21 | Foverd.ipPeerPortA (con 2) | 0 | 1054, if Master or 1053 if Slave |
| 22 | Pom.dataSync | False | True if Master or Slave, both sides |
| 23 | Diskmonitor.OptFileSys | <blank> | ../var/log |
| 24 | NumberOfThreads | 0 | Determined based on the number of CPUs in the Cisco PGW 2200 Softswitch |

**Note**

For an example of an updated configuration file, see the [“Updated Configuration File Sample”](#) section on page D-11.

Using the Cisco MGC Environment Configuration Tool

You must configure the basic parameters required to bring the system to an operational mode. Follow these steps to use the MGC Environment Configuration Tool XECfg program:

Step 1 Log in as **mgcusr**, enter the following at the command prompt, and press **Enter**:

```
% MGC_Setup
```

A dialog box displays, warning that the MGC Environment Configuration Tool is for initial system configuration only.

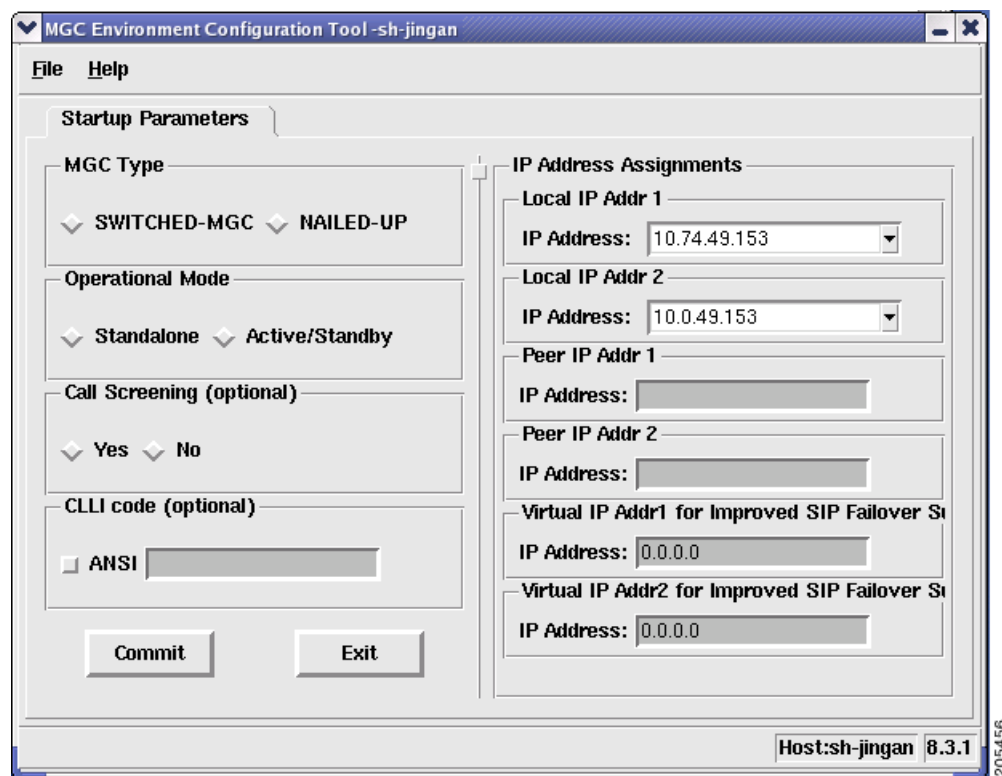
**Note**

To run the MGC Environment Configuration Tool in detail mode, enter the command **MGC_Setup -detail**.

Step 2 Click **Yes** to continue running the XECfg program.

The MGC Environment Configuration Tool screen expands to provide information from the XECfgParm.dat file. [Figure 4-1](#) shows the MGC Environment Configuration Tool screen.

Figure 4-1 MGC Environment Configuration Tool



[Table 4-5](#) explains the startup parameters listed in the MGC Environment Configuration Tool.

Table 4-5 MGC Environment Configuration Tool Startup Parameters

| Field | Usage |
|------------------|--|
| MGC Type | Indicates whether the Cisco PGW 2200 Softswitch connection type. SWITCHED-MGC specifies a dynamic connection such as a trunk group; NAILED-UP specifies a permanent connection such as a sigpath. |
| Operational Mode | Indicates the whether the Cisco PGW 2200 Softswitch is operating as a stand-alone system or in a fault-tolerant configuration with an active and standby Cisco PGW 2200 Softswitch. Note If you select Active/Standby, you must provide a peer IP address. |

Table 4-5 MGC Environment Configuration Tool Startup Parameters (continued)

| Field | Usage |
|--|---|
| Call Screening | Indicates whether call screening is enabled or disabled on the Cisco PGW 2200 Softswitch. This setting is optional. |
| CLLI Code | The CLI code identifying the site where the Cisco PGW 2200 Softswitch is located. This setting is optional. |
| Local IP Address 1 | The primary IP address of the Cisco PGW 2200 Softswitch. |
| Peer IP Address 1 | The IP address of the peer Cisco PGW 2200 Softswitch. A peer IP address is required for a fault tolerant (Active/Standby) system. |
| Virtual IP Address 1 | Additional virtual IP address for the Cisco PGW 2200 Softswitch. Virtual IP addresses can improve failover for SIP connections in the event of a hardware failure. |
| Virtual IP Address 2 | Additional virtual IP address for the Cisco PGW 2200 Softswitch. Virtual IP addresses can improve failover for SIP connections in the event of a hardware failure. |
| Virtual IP Addr1 for Improved SIP Failover Support | Setting 0.0.0.0 to both will disable the improved SIP failover support. Configuring only one will cause the switchover, if the physical interface where it present fails. Must be from *.IP_Addr1 subnet. |
| Virtual IP Addr2 for Improved SIP Failover Support | Setting 0.0.0.0 to both will disable the improved SIP failover support. Configuring only one will cause the switchover, if the physical interface where it present fails. Must be from *.IP_Addr2 subnet. |

Step 3 Click the **Commit** button after you have finished setting the parameters.

**Note**

The required parameters are the MGC type and its operating mode. There are no default parameters defined when you bring up the XECfg program.

The Cisco PGW 2200 Softswitch performs the following actions after you commit the new parameters:

- The XECfg program backs up the current XECfgParm.dat file into the XECfgParm.dat.xyz file, where xyz represents the file version number. The version numbers range from 0 to 19.
- If the operating mode is stand-alone, the Cisco PGW 2200 Softswitch updates the XECfgParm.dat file with new parameters.
- If the operating mode is fault-tolerant, the Cisco PGW 2200 Softswitch updates the XECfgParm.dat file and generates the XECfgParm.data.slave file based on the XECfgParm.dat file.

**Note**

There is no backup for the XECfgParm.dat.slave file.

- The Cisco PGW 2200 Softswitch comments out old parameters and inserts the new parameters. The Cisco PGW 2200 Softswitch inserts a history line to note updated parameters.
- The Cisco PGW 2200 Softswitch moves required parameters to the top of the file for convenience.

**Note**

You can use the comment line to record the file history.

Step 4 Click **Exit** to exit the application.

If you set the Operational Mode to Active/Standby, the XECfg program displays a prompt that allows you to transfer the XECfgParm.dat.slave file to a remote machine when you exit the application. To transfer the file to a remote machine, enter the FTP password. Otherwise, exit the application.

Configuring Groups and Users

You must set up groups and users for the Cisco PGW 2200 Softswitch software on each host server. A user must be a member of the “mgcgrp” group to use certain Cisco PGW 2200 Softswitch software functions, such as Man-Machine Language (MML). (MML is an interface that enables you to communicate with the Cisco PGW 2200 Softswitch. Users with full MML privileges have monitor and control access; users with minimal MML privileges have only monitor access. For more information on MML, see the *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide* and the *Cisco PGW 2200 Softswitch Release 9 MML Command Reference*.)

Verifying the mgcgrp Group

To verify the mgcgrp group, complete the following steps:

-
- Step 1** Log in to the Cisco PGW 2200 Softswitch host as root.
 - Step 2** Change to the /etc directory.
 - Step 3** Edit the group file to verify the entry for the mgcgrp group. The file should contain the following line:
`mgcgrp: :20000:`
 - Step 4** Save and close the group file.
 - Step 5** Edit the passwd file to verify the entry for the mgcusr user. The file should contain the following line:
`mgcusr:x:20000:20000:./opt/CiscoMGC/local:/bin/csh`
- If the file does not contain the line, add it.
- Step 6** Save and close the password file.
-

This completes the procedure for verifying the mgcgrp group.

Adding a User with Full MML Privileges

To add a user with full MML privileges, complete the following steps.

**Caution**

If your user's home directory differs from /opt/CiscoMGC/local, you must perform [Step 6](#) through [Step 7](#) before using MML.

-
- Step 1** Log in to the Cisco PGW 2200 Softswitch host as root.
 - Step 2** Enter the following command:

```
# useradd -u UID -g mgcgrp -d /opt/CiscoMGC/local -s /bin/csh -m username
```

UID is a user ID that is an integer from 0 through 2147483647 (excluding the numbers 0, 1, 2, 3, 4, 5, 9, 37, 71, 60001, 60002, and 65534, because they are used by the operating system).

Step 3 Add the new username to the mgcgrp group in the group file:

```
mgcgrp : 20000 : username
```



Note The group file is a comma-separated list of user names. If you add more than one user, use commas (with no spaces) to separate one name in the list from another.

Step 4 Enter the following command and press **Enter**:

```
# passwd username
```

Step 5 Type the user's *password* and press **Enter** twice when prompted.

Step 6 Log in to the Cisco PGW 2200 Softswitch as the new user.

Step 7 Enter the following command and press **Enter**:

```
% mml
```

The MML interface launches. To exit MML, type **quit** and press **Enter**.

This completes the procedure for adding a user with full MML privileges.

Adding a User with Minimal MML Privileges

To add a user with full MML privileges, complete the following steps.

Step 1 Log in to the Cisco PGW 2200 Softswitch host as root.

Step 2 Add a group with minimal MML privileges using the following command:

```
# groupadd minmml
```

Step 3 Prepare the .cshrc file for the group with minimal MML privileges using the following commands:

```
# mkdir /opt/CiscoMGC/local/minmml
# cp /opt/CiscoMGC/local/.cshrc /opt/CiscoMGC/local/minmml/.cshrc
# chgrp minmml /opt/CiscoMGC/local/minmml/.cshrc
```

Step 4 Add a user to the group with minimal MML privileges using the following command:

```
# useradd -g minmml -d /opt/CiscoMGC/local/minmml -s /bin/csh -m username
```

Step 5 Change the password for the newly added user using the following command.

```
# passwd username
```

Step 6 Type the user's *password* and press **Enter** twice when prompted.

Step 7 Log in to the Cisco PGW 2200 Softswitch as the new user.

Step 8 Enter the following command and press **Enter** to verify the new user's access privileges:

```
% mml
```

Text similar to the following is displayed:

```
Copyright ? 1998-2002, Cisco Systems, Inc.
```

```
User has minimal access privileges  
sh-passat mml>
```

To exit MML, type **quit** and press **Enter**.

This completes the procedure for adding a user with minimal MML privileges.

The group and user configuration is now complete. Continue to the [“Configuring SNMP Support Resources” section on page 4-13](#). If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request” section on page x](#).

Configuring SNMP Support Resources

The Cisco PGW 2200 Softswitch software includes a Simple Network Management Protocol (SNMP) agent subsystem that provides an alarm management interface on the Cisco PGW 2200 Softswitch. It uses SNMP to report events, or traps (such as alarms), to your SNMP Manager and to provide access to the Cisco PGW 2200 Softswitch Management Information Base (MIB).



Note

SNMP MIB measurements are only valid on the active node. They are not replicated on the standby node.

The SNMP agent subsystem reports the following event categories to your SNMP Manager:

1. Communications
2. Quality of Service
3. Processing
4. Equipment
5. Environment

In a fault tolerant configuration, the SNMP agent subsystem runs on both the active and standby machines.



Note

If your system is running Cisco PGW 2200 Softswitch software Release 9.3(2) or later, go to the [“Migrating the SNMP Configuration to a More Secure Environment \(for Cisco PGW 2200 Softswitch Release 9.3\(2\) or Later\)” section on page 4-14](#) for SNMP configuration procedures.



Note

For a sample snmpd.cnf file, see the [“Sample Configured snmpd.cnf File” section on page D-13](#).



Note

Use the config-snmp utility to configure SNMP community names and trap destinations.

**Note**

SNMP managers such as the Cisco Media Gateway Controller Node Manager (Cisco MNM) or HP OpenView can be used to receive traps.

**Note**

The **config-snmp** utility is case-sensitive. It will accept “name1” and “NAME1” as two different entries.

Migrating the SNMP Configuration to a More Secure Environment (for Cisco PGW 2200 Softswitch Release 9.3(2) or Later)

If your system is running Cisco PGW 2200 Softswitch software version 9.3(2) or later, Cisco recommends that you migrate the SNMP configuration to a more secure environment by running the **config-snmp** utility. Use the **config-snmp** utility to perform the following:

- Modify the **snmpd.cnf** file to automatically migrate old configuration files to a secure environment.
- Facilitate the addition or deletion of the community string and trap destination.

**Note**

There is no limit to the number of community strings that can be added to the configuration.

**Note**

The **config-snmp** script only allows you to add or delete an entry to your **snmpd.cnf** file.

Basic Tasks

The following is an overview of the major tasks you must perform to get the SNMP security provided by the **config-snmp** utility:

1. Run **config-snmp** utility. See the [“Running the config-snmp Utility” section on page 4-15](#).
2. Add a new snmpCommunityEntry. See the [“Adding an SNMP Community Entry” section on page 4-17](#)
3. Make sure that the new snmpCommunityEntry string is recognized and can communicate with your Cisco PGW 2200 Softswitch hosts. See the [“Activating the New Settings” section on page 4-23](#).
4. Delete the old entry that you were using. See the [“Deleting an SNMP COMMUNITY” section on page 4-19](#).

Before You Run the config-snmp Utility

**Note**

If you have completed a first-time installation of the Cisco PGW 2200 Softswitch software with Release 9.8 and its associated patches, copy the **snmpd.cnf.tmpl** to **snmpd.cnf** before you run the **config-snmp** utility. Users who have upgraded to Release 9.8 from a previous release do not have to perform this procedure. To copy the **snmpd.cnf.tmpl** to the **snmp.cnf**, perform the following steps:

1. Log in as root and enter the following commands:


```
cd /opt/CiscoMGC/snmp
cp snmpd.cnf.tmpl snmpd.cnf
```

2. Enter the following commands to restart the snmp daemon:

```
ps -ef |grep snmpd
```

The system will display the process ID for the snmp daemon. Restart the daemon using the following command:

```
kill -9 snmpd_pid
```

Where *snmpd_pid* is the process ID for the snmp daemon.

Note that the first instance of ReadAndNotifyToAll in the snmpCommunityEntry will be the only CommunityName used in the Trap.

For example, if your **snmpd.cnf** file has the following snmpCommunityEntry, you will find only the CommunityName of Iron1 in the Trap.

```
#Entry type: snmpCommunityEntry
#Format: snmpCommunityIndex (text)
#       snmpCommunityName (text)
#       snmpCommunitySecurityName (text)
#       snmpCommunityContextEngineID (octetString)
#       snmpCommunityContextName (text)
#       snmpCommunityTransportTag (text)
#       snmpCommunityStorageType (nonVolatile, permanent, readOnly)
snmpCommunityEntry Iron1 ron1 ReadAndNotifyToAll localSnmpID - - nonVolatile
snmpCommunityEntry Iron2 ron2 ReadWriteAll localSnmpID - - nonVolatile
snmpCommunityEntry Iron3 ron3 ReadAndNotifyToAll localSnmpID - - nonVolatile
snmpCommunityEntry admin WbNAGZ54 PGWInternalSignal localSnmpID - localAccess \
nonVolatile
snmpCommunityEntry readonly public ReadAndNotifyToAll localSnmpID - - \
nonVolatile
```

Running the config-snmp Utility

Perform the following steps to run the **config-snmp** utility:

- Step 1** Make sure your system has the latest Cisco PGW 2200 Softswitch patches on both Host A and Host B. See the *Release Notes for Cisco PGW 2200 Softswitch Release 9.8(1)* for the patches' installation procedures.
- Step 2** On Host A, log in as **root** user.
- Step 3** Check whether the **snmpd** or **critagt** process is running.



Note If **snmpd** or **critagt** are not running, call Cisco TAC or contact your Field Engineer for assistance.

Enter one of the following commands and press **Enter**:

- a. To check **snmpd**:

```
# ps -ef |grep snmpd
```

If the **snmpd** process is running, text similar to the following is displayed:

```
root 12098 27888 0 Jun 16 ?
0:00 /opt/CiscoMGC/snmp/snmpd -tcplocal -d
```

- b. To check **critagt**:

```
# ps -ef |grep critagt
```

If the **critagt** process is running, text similar to the following is displayed:

```
root 27888      1  0   May 19 ?
0:15 /opt/CiscoMGC/snmp/critagt -d
```

- Step 4** To start the **config-snmp** utility, enter the following commands and press **Enter**:

```
# cd /opt/CiscoMGC/local
# config-snmp
```

The following screen is displayed:

```
Migrating snmpd.cnf into a more secure setting...
```

```
===== SNMPD Configuration Main Menu =====
```

1. View Configuration Entries
2. Add an SNMP Community
3. Delete an SNMP Community
4. Add a Trap Destination
5. Delete a Trap Destination
6. Activate the New Settings

Enter a selection (1 through 6) or 'q' to quit:

- Step 5** To view the configuration entries, enter **1** and press **Enter**.

The Entries Menu is displayed and you are prompted to make a selection:

```
===== Entries Menu =====
```

1. sysDescr
2. sysObjectID
3. sysLocation
4. sysContact
5. sysName
6. snmpEnableAuthenTraps
7. MAX_THREADS
8. MAX_PDU_TIME
9. MAX_OUTPUT_WAITING
10. MAX_SUBAGENTS
11. subagent
12. snmpCommunityEntry
13. snmpEngineBoots
14. snmpEngineID
15. SNMP_ENGINE_ID_SRC
16. usmUserEntry
17. vacmSecurityToGroupEntry
18. vacmAccessEntry
19. vacmViewTreeFamilyEntry
20. snmpNotifyEntry
21. snmpTargetAddrEntry
22. snmpTargetParamsEntry
23. snmpNotifyFilterProfileEntry
24. snmpNotifyFilterEntry
25. httpUserNameEntry

Enter a selection (1 through 25) or 'q' to quit to Main Menu:

- Step 6** Enter your selection number (1 through 25) to view your configuration entries.

Adding an SNMP Community Entry

Continuing from [Step 6](#), above (of the section [Running the config-snmp Utility](#)):

Step 1 Enter **12** to select **snmpCommunityEntry** and view the entries:

Text similar to the following and the SNMPD Configuration Main Menu are displayed.

```
#Entry type: snmpCommunityEntry
#Format: snmpCommunityIndex (text)
#       snmpCommunityName (text)
#       snmpCommunitySecurityName (text)
#       snmpCommunityContextEngineID (octetString)
#       snmpCommunityContextName (text)
#       snmpCommunityTransportTag (text)
#       snmpCommunityStorageType (nonVolatile, permanent, readOnly)
snmpCommunityEntry IT555 T555 ReadWriteAll localSnmpID - - nonVolatile
snmpCommunityEntry Ijammy jammy ReadAndNotifyToAll localSnmpID - - nonVolatile
snmpCommunityEntry admin za8RQzBg PGWInternalSignal localSnmpID - localAccess
nonVolatile
```

```
===== SNMPD Configuration Main Menu =====

1. View Configuration Entries
2. Add an SNMP Community
3. Delete an SNMP Community
4. Add a Trap Destination
5. Delete a Trap Destination
6. Activate the New Settings
```

Enter a selection (1 through 6) or 'q' to quit:

Step 2 You are prompted to make a selection. Enter **2** to add an SNMP Community.

The Add CommunityString Menu is displayed and you are asked if you would like to proceed with adding a community string:

```
===== Add CommunityString Menu =====

SnmpCommunityName CommunitySecurityName

cisco cisco
public ReadAndNotifyToAll

-- Where:

CommunitySecurityName SecurityModel Read Write Notification

ReadOnly snmpv1 ApplicationsView - ApplicationsView
ReadOnly snmpv2c ApplicationsView - ApplicationsView
ReadOnly usm ApplicationsView - ApplicationsView
NotifyOnly snmpv1 - - ApplicationsView
NotifyOnly snmpv2c - - ApplicationsView
NotifyOnly usm - - ApplicationsView
ReadWriteAll snmpv1 ApplicationsView ApplicationsView -
ReadWriteAll snmpv2c ApplicationsView ApplicationsView -
ReadWriteAll usm ApplicationsView ApplicationsView -
ReadWriteNotify snmpv1 ApplicationsView ApplicationsView ApplicationsView
ReadWriteNotify snmpv2c ApplicationsView ApplicationsView ApplicationsView
ReadWriteNotify usm ApplicationsView ApplicationsView ApplicationsView
ReadAndNotifyToAll snmpv1 ApplicationsView - ApplicationsView
ReadAndNotifyToAll snmpv2c ApplicationsView - ApplicationsView
```

```
ReadAndNotifyToAll usm ApplicationsView - ApplicationsView
CiscoInternalSignal snmpv1 All All All
CiscoInternalSignal snmpv2c All All All
CiscoInternalSignal usm All All All
```

Would you like to proceed with the Add [n]/[y]?

- Step 3** Enter **y** to proceed (if you enter **n** to cancel the addition, you return to the SNMPD Configuration Main Menu).

The following text is displayed, prompting you to enter an `snmpCommunityName`.

Enter `snmpCommunityName`:



Note The `snmpCommunityName` should be at least three characters in length. The `snmpCommunityName` can contain numeric characters, but should begin with an alpha character.

- Step 4** Enter an `snmpCommunityName` (the following name is an example):

```
comname1
```

Text similar to the following is displayed:

Enter `CommunitySecurityName` (ReadAndNotifyToAll or ReadWriteAll):

- Step 5** Enter a community security name (the following security name entry is an example):

```
ReadAndNotifyToAll
```



Note The `CommunitySecurityName` (ReadAndNotifyToAll or ReadWriteAll) is case sensitive.

Text similar to the following text is displayed:

```
snmpCommunityName: comname1 is about to be added. Are you sure that you want to add this
snmpCommunity Name [y]/[n]?
```

- Step 6** Enter **y** to add the `snmpCommunityName` (if you enter **n** to cancel the addition, you return to the SNMPD Configuration Main Menu):

Text similar to the following is displayed:

```
Adding snmpCommunity:
snmpCommunityEntry Icomname1 comname1 ReadAndNotifyToAll localSnmpID - - nonVolatile
```

```
===== SNMPD Configuration Main Menu =====
```

1. View Configuration Entries
2. Add an SNMP Community
3. Delete an SNMP Community
4. Add a Trap Destination
5. Delete a Trap Destination
6. Activate the New Settings

Enter a selection (1 through 6) or 'q' to quit:

- Step 7** Enter a selection number, 1 through 6.

For steps on how to execute the selections from the SNMPD Configuration Main Menu, see the following sections:

- [Adding an SNMP Community Entry, page 4-17](#)
- [Deleting an SNMP COMMUNITY, page 4-19](#)
- [Adding a Trap Destination, page 4-20](#)
- [Deleting a Trap Destination, page 4-22](#)
- [Activating the New Settings, page 4-23](#)
- [Verifying the SNMP Configuration Migration, page 4-24](#)



Note To complete the migration of the SNMP configuration to a more secure environment, see the [“Activating the New Settings” section on page 4-23](#).

The procedure for adding an SNMP Community Entry is now complete.

From the SNMPD Configuration Main Menu, choose option 6 (Activate the New Settings) to commit the changes, or select other options (1 through 5) to add or delete a community name or trap.

Deleting an SNMP COMMUNITY

From the SNMPD Configuration Main Menu:

- Step 1** If you select **3** (Delete an SNMP Community) from the SNMPD Configuration Main Menu, the delete CommunityString Menu is displayed:



Note The SNMP Community Names listed in the following display are examples.

```
===== Delete CommunityString Menu =====
```

```
SnmCommunityName      CommunitySecurityName

comname1               ReadAndNotifyToAll
T555                   ReadWriteAll
jammy                  ReadAndNotifyToAll
```

```
-- Where:
```

| CommunitySecurityName | SecurityModel | Read | Write | Notification |
|-----------------------|---------------|---------------|---------------|---------------|
| ReadWriteAll | snmpv1 | AllMibObjects | AllMibObjects | - |
| ReadWriteAll | snmpv2c | AllMibObjects | AllMibObjects | - |
| ReadAndNotifyToAll | snmpv1 | AllMibObjects | - | AllMibObjects |
| ReadAndNotifyToAll | snmpv2c | AllMibObjects | - | AllMibObjects |

```
Would you like to proceed with the Delete  [n]/[y]?
```

- Step 2** Enter **y** to delete SNMP Community (if you enter **n** to cancel the deletion, you return to the SNMPD Configuration Main Menu):

Text similar to the following is displayed:

Enter snmpCommunityName:

- Step 3** Enter an SnmpCommunityName. Select an SnmpCommunityName from the list that is displayed in [Step 1](#). The SnmpCommunityName **T555**, is an example:

T555

Text similar to the following is displayed:

```
snmpCommunityName: T555 is about to be deleted. Are you sure that you want to delete this
snmpCommunity Name [y]/[n]?
```

- Step 4** Enter **y** to confirm the deletion (if you enter **n** to cancel the deletion, you return to the SNMPD Configuration Main Menu).

Text similar to the following is displayed and you are returned to the SNMPD Configuration Main Menu:

Deleting snmpCommunity= T555

```
===== SNMPD Configuration Main Menu =====
```

1. View Configuration Entries
2. Add an SNMP Community
3. Delete an SNMP Community
4. Add a Trap Destination
5. Delete a Trap Destination
6. Activate the New Settings

Enter a selection (1 through 6) or 'q' to quit:

- Step 5** Enter your selection. For detailed procedures for your selection, refer to the following list:

- [Adding an SNMP Community Entry, page 4-17](#)
- [Deleting an SNMP COMMUNITY, page 4-19](#)
- [Adding a Trap Destination, page 4-20](#)
- [Deleting a Trap Destination, page 4-22](#)
- [Activating the New Settings, page 4-23](#)
- [Verifying the SNMP Configuration Migration, page 4-24](#)

The procedure for deleting an SNMP Community Entry is now complete. Proceed to the selection you entered in the SNMPD Configuration Main Menu.

Adding a Trap Destination

From the SNMPD Configuration Main Menu:

- Step 1** Select option **4** (Add a Trap Destination) from the SNMPD Configuration Main Menu and press **Enter** to add a Trap Destination.

The Add Trap Menu is displayed:



Note The IP Address (Target Address) listed below is an example of existing Trap entries.

```
===== Add Trap Menu =====
```

```
1. TargetAddress: 6.6.6.6:0 , TargetAddrParams: v1ExampleParams , IP Mask:
255.255.255.255:0
```

```
Would you like to proceed with the Add [n]/[y]?
```

- Step 2** Enter **y** to add a Trap Destination (if you enter **n** to cancel the addition, you return to the SNMPD Configuration Main Menu).

Text similar to the following is displayed:

```
Enter IP Address (x.x.x.x):
```

- Step 3** Enter the IP address listed in [Step 1](#):

```
7.7.7.7
```

Text similar to the following is displayed:

```
Enter Trap Type (v1 or v2c):
```

- Step 4** Enter the Trap Type based on your SNMP manager. The following entry is an example:

```
v1
```

Text similar to the following is displayed:

```
'snmpTargetAddrEntry 483 snmpUDPDomain 7.7.7.7:0 100 3 TrapSink v1ExampleParams
nonVolatile 255.255.255.255:0 2048
' is about to be added. Are you sure that you want to add this Trap Entry [n]/[y]?
```

- Step 5** Enter **y** to add a Trap Destination (if you enter **n** to cancel the addition, you return to the SNMPD Configuration Main Menu).

Text confirming the addition of the Trap Destination is displayed, followed by the SNMPD Configuration Main Menu:

```
Adding Trap: snmpTargetAddrEntry 483 snmpUDPDomain 7.7.7.7:0 100 3 TrapSink
v1ExampleParams nonVolatile 255.255.255.255:0 2048
```

```
===== SNMPD Configuration Main Menu =====
```

1. View Configuration Entries
2. Add an SNMP Community
3. Delete an SNMP Community
4. Add a Trap Destination
5. Delete a Trap Destination
6. Activate the New Settings

```
Enter a selection (1 through 6) or 'q' to quit:
```

```
ENTER YOUR SELECTION.
```

- Step 6** Enter your selection. For detailed procedures for your selection, go to the section listed below:

- [Adding an SNMP Community Entry, page 4-17](#)
- [Deleting an SNMP COMMUNITY, page 4-19](#)
- [Adding a Trap Destination, page 4-20](#)
- [Deleting a Trap Destination, page 4-22](#)
- [Activating the New Settings, page 4-23](#)

- [Verifying the SNMP Configuration Migration, page 4-24](#)

The procedure for adding a Trap Destination is now complete. Proceed to the selection you entered in the SNMPD Configuration Main Menu.

Deleting a Trap Destination

From the SNMPD Configuration Main Menu:

Step 1 To delete a Trap Destination, enter **5** (Delete a Trap Destination):

Text similar to the following is displayed:

```
===== Delete Trap Menu =====
```

```
1. TargetAddress: 7.7.7.7:0 , TargetAddrParams: v1ExampleParams ,
   IP Mask: 255.255.255.255:0
2. TargetAddress: 6.6.6.6:0 , TargetAddrParams: v1ExampleParams ,
   IP Mask: 255.255.255.255:0
```

Would you like to proceed with the Delete [n]/[y]?

Step 2 Enter **y** to delete a Trap Destination (if you enter **n** to cancel the deletion, you return to the SNMPD Configuration Main Menu):

Text similar to the following is displayed:

Enter a selection (1 through 2):



Note The Target Addresses (1 through 2) shown above are examples only.

Step 3 Enter **1** to select the TargetAddress to be deleted:

Text similar to the following is displayed:

```
Trap is about to be deleted. Are you sure that you want to delete this Trap Entry
[n]/[y]?
```

Step 4 Enter **y** to confirm the deletion (if you enter **n** to cancel the deletion, you return to the SNMPD Configuration Main Menu).

Text confirming the deleted Trap Entry is displayed and you are returned to the SNMPD Configuration Main Menu. Note that **483** (below) is an internal Trap snmpTargetAddrName.

```
Deleting Trap snmpTargetAddrName = 483
```

```
===== SNMPD Configuration Main Menu =====
```

```
1. View Configuration Entries
2. Add an SNMP Community
3. Delete an SNMP Community
4. Add a Trap Destination
5. Delete a Trap Destination
6. Activate the New Settings
```

Enter a selection (1 through 6) or 'q' to quit:

Step 5 Enter your selection. For detailed procedures for your selection, refer to the following list:

- [Adding an SNMP Community Entry, page 4-17](#)
- [Deleting an SNMP COMMUNITY, page 4-19](#)
- [Adding a Trap Destination, page 4-20](#)
- [Deleting a Trap Destination, page 4-22](#)
- [Activating the New Settings, page 4-23](#)
- [Verifying the SNMP Configuration Migration, page 4-24](#)

The procedures for deleting a Trap Destination is now complete. Proceed to the selection you entered in the SNMPD Configuration Main Menu.

Activating the New Settings

From the SNMPD Configuration Main Menu:

Step 1 Enter **6** to activate the new settings:

6

Text similar to the following is displayed:

Backing up the current snmpd.cnf to snmpd.cnf.backup.

snmpd.cnf.backup already exists. Do you want to overwrite the file [y]/[n]?



Note If you choose **n**, your backup file will not be updated.

Step 2 Enter **y** to activate the new settings.

y

Are you sure you would like to Activate the New Settings [y]/[n]?



Note If you choose **y**, your SNMPD.dat file will be updated and you will be exited from the utility.

If you choose **n**, your SNMPD.dat file will not be updated and you will be exited from the utility.

Step 3 Enter **y** to activate the new settings (if you enter **n** to cancel the activation, you return to the SNMPD Configuration Main Menu).

Text similar to the following is displayed:

snmpd.cnf file has been updated.

The procedure for activating the new settings is now complete and you are exited from the config-snmp utility. Proceed to the following section, [“Verifying the SNMP Configuration Migration”](#).

Verifying the SNMP Configuration Migration

Perform the following steps to verify that your changes were applied by running the **config-snmp** utility:

Step 1 To start the **config-snmp** utility, type the following command and press **Enter**:

```
# config-snmp
```

Text similar to the following is displayed:

```
Migrating snmpd.cnf into a more secure setting...
```

When the SNMPD Configuration Main Menu is displayed, you are prompted to make a selection:

```
===== SNMPD Configuration Main Menu =====
```

1. View Configuration Entries
2. Add an SNMP Community
3. Delete an SNMP Community
4. Add a Trap Destination
5. Delete a Trap Destination
6. Activate the New Settings

```
Enter a selection (1 through 6) or 'q' to quit: 1
```

Step 2 Enter **1** to view the configuration entries.

The Entries Menu is displayed and you are prompted to make a selection:

```
===== Entries Menu =====
```

1. sysDescr
2. sysObjectID
3. sysLocation
4. sysContact
5. sysName
6. snmpEnableAuthenTraps
7. MAX_THREADS
8. MAX_PDU_TIME
9. MAX_OUTPUT_WAITING
10. MAX_SUBAGENTS
11. subagent
12. snmpCommunityEntry
13. communityEntry
14. snmpEngineBoots
15. usmUserEntry
16. vacmAccessEntry
17. vacmSecurityToGroupEntry
18. vacmViewTreeFamilyEntry
19. snmpNotifyEntry
20. snmpTargetAddrEntry
21. snmpTargetParamsEntry
22. snmpNotifyFilterProfileEntry
23. snmpNotifyFilterEntry
24. httpUserNameEntry

```
Enter a selection (1 through 24) or 'q' to quit to Main Menu:
```

- a. If you select 12 from the SNMPD Configuration Main Menu, the `snmpCommunityEntry` is displayed, showing the changes you made:



Note The following entries are examples only.

```
#Entry type: snmpCommunityEntry
#Format: snmpCommunityIndex (text)
#      snmpCommunityName (text)
#      snmpCommunitySecurityName (text)
#      snmpCommunityContextEngineID (octetString)
#      snmpCommunityContextName (text)
#      snmpCommunityTransportTag (text)
#      snmpCommunityStorageType (nonVolatile, permanent, readOnly)
snmpCommunityEntry Icomname1 comname1 ReadWriteAll localSnmpID - - nonVolatile
snmpCommunityEntry Ijammy jammy ReadAndNotifyToAll localSnmpID - - nonVolatile
snmpCommunityEntry admin VD6FZbov PGWInternalSignal localSnmpID - localAccess
nonVolatile
```

- b. If you select 20 from the SNMPD Configuration Main Menu, the Trap Destination information is displayed, showing the changes you made:



Note The following entries are examples only.

```
#Entry type: snmpTargetAddrEntry
#Format: snmpTargetAddrName (text)
#      snmpTargetAddrTDomain (snmpUDPDDomain, snmpIPXDomain, etc.)
#      snmpTargetAddrTAddress (transport address, i.e. 192.147.142.254:0)
#      snmpTargetAddrTimeout (integer)
#      snmpTargetAddrRetryCount (integer)
#      snmpTargetAddrTagList (text)
#      snmpTargetAddrParams (text)
#      snmpTargetAddrStorageType (nonVolatile, permanent, readOnly)
#      snmpTargetAddrTMask (transport mask, i.e. 255.255.255.255:0)
#      snmpTargetAddrMMS (integer)
snmpTargetAddrEntry 531 snmpUDPDDomain 6.6.6.6:0 100 3 TrapSink v1ExampleParams
nonVolatile 255.255.255.255:0 2048
snmpTargetAddrEntry local snmpUDPDomain 127.0.0.1:0 100 3 localAccess -
nonVolatile 255.255.255.255:0 2048
```

The SNMP support resource configuration is now complete. Continue to the [“Configuring the Execution Environment” section on page 4-25](#) to configure the execution environment. If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request” section on page x](#).

Configuring the Execution Environment

This section provides instructions for configuring the Cisco PGW 2200 Softswitch software execution environment and contains the following topics:

- [Configuring Basic System Information, page 4-28](#)
- [Specifying IP Addresses, page 4-30](#)
- [Configuring Engine Parameters, page 4-32](#)
- [Enabling Call Screening, page 4-34](#)
- [Configuring Call Detail Record File Output, page 4-35](#)
- [Configuring the Clearing Location and Default Location Parameters, page 4-36](#)
- [Configuring Switchover, page 4-39](#)

- [Initializing the Provisioning Object Manager, page 4-41](#)

The configuration data file, or XECfgParm.dat file (located in /opt/CiscoMGC/etc/XECfgParm.dat), lists all the components in the Cisco PGW 2200 Softswitch software and defines how it operates. You must edit the execution environment parameters in the XECfgParm.dat file to initialize and configure the Cisco PGW 2200 Softswitch software application. For a complete list of the parameters found in the XECfgParm.dat file and how they are used by the Cisco PGW 2200 Softswitch, see [Appendix A, “XECfgParm.dat File Parameters.”](#)

For samples of configured XECfgParm.dat files, see the “[Sample Configured XECfgParm.dat Files for Cisco PGW 2200 Softswitch Release 9.8\(1\)](#)” section on page D-16.

**Caution**

To ensure that your system works as intended, **edit only the XECfgParm.dat file parameters which are listed below**, and remember that all parameters are case-sensitive.

Do not modify the **processes.dat** file. This XECfgParm.dat file should remain unmodified, as delivered with the Cisco PGW 2200 Softswitch software. If this file is modified, procM may core dump when you start the Cisco PGW 2200 Softswitch software.

Changing XECfgParm.dat File Parameters

For a complete list of the parameters found in the XECfgParm.dat file and how they are used by the Cisco PGW 2200 Softswitch, see [Appendix A, “XECfgParm.dat File Parameters.”](#)

If you have a fault tolerant system with two Cisco PGW 2200 Softswitch hosts, the XECfgParm.dat files are different for each host. For examples of these XECfgParm.dat files, see the “[Sample Configured XECfgParm.dat Files for Cisco PGW 2200 Softswitch Release 9.8\(1\)](#)” section on page D-16.

To change the XECfgParm.dat file parameters, perform the following steps:

-
- Step 1** Log in as root and go to the # prompt.
- Step 2** If the Cisco PGW 2200 Softswitch software is running, enter the following command:
- ```
/etc/init.d/CiscoMGC stop
```
- Wait until the system returns the following response:
- ```
Signalling procM to shut down
...shutdown complete
```
- Step 3** Change to the /opt/CiscoMGC/etc directory, which contains the XECfgParm.dat file used by your system.
- Step 4** Open the XECfgParm.dat file with any text editor, such as vi.
- Step 5** Save your changes and close the editor.
- Step 6** Restart the Cisco PGW 2200 Softswitch software by entering the following command:
- ```
/etc/init.d/CiscoMGC start
```



**Note**

Do not restart the software yet if you need to configure SCP queries or initialize the call screening database. Complete the instructions in the appropriate sections of this chapter before restarting the software.

Continue to [“Changing XECfgParm.dat File Parameters in a Running Fault Tolerant System”](#) to change parameters without call interruption. Continue to the [“Configuring SCP Queries”](#) section on page 4-42 to configure Service Control Point (SCP) queries using transaction capabilities application part (TCAP). If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x.

## Changing XECfgParm.dat File Parameters in a Running Fault Tolerant System

To change parameters in a running fault tolerant system without call interruption, perform the following steps:

- Step 1** Log in to the active host (Host X) and make your changes. See [“Changing XECfgParm.dat File Parameters”](#) section on page 4-26 for more specific instructions.
- Step 2** Log in to the standby host (Host Y) as root and stop the Cisco PGW 2200 Softswitch software by entering the following command:  

```
/etc/init.d/CiscoMGC stop
```
- Step 3** Restart the Cisco PGW 2200 Softswitch software on the standby box (Host Y) by entering the following command:  

```
/etc/init.d/CiscoMGC start
```
- Step 4** Perform switchover on the active host (Host X). Log in to the active host (Host X) and stop the Cisco PGW 2200 Softswitch software by entering the following command:  

```
/etc/init.d/CiscoMGC stop
```

Stopping the software on Host X causes switchover to the standby, Host Y. Host Y becomes active and takes over call processing.

**Tip**

If Host Y does not take over call processing after switchover, restart the software on Host X to take over the calls. Check the parameters you changed on Host Y and make sure you have the correct values.

- Step 5** Restart the Cisco PGW 2200 Softswitch software on the now standby host, Host X, by entering the following command:  

```
/etc/init.d/CiscoMGC start
```
- Step 6** On Host Y, the currently active host, enter the following MML command to switch call processing from Host Y to the newly changed Host X. Host X becomes active:  

```
mml> SW-OVER::CONFIRM
```

**Tip**

If Host X does not take over call processing after switchover, restart the software on Host Y to take over the calls. Check the parameters you changed on Host X and make sure you have the correct values.

## Configuring Basic System Information

**Note**

For a complete list of the parameters found in the XECfgParm.dat file and how they are used by the Cisco Cisco PGW 2200 Softswitch, see [Appendix A, “XECfgParm.dat File Parameters.”](#)

To configure basic system information required for your system to function, modify the following parameters in the first section of the XECfgParm.dat file:

| Parameter              | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *.desiredPlatformState | <p>To determine the desired platform state at initialization, enter one of the following values:</p> <ul style="list-style-type: none"> <li>• <b>master</b>—If you have two (active and standby) Cisco PGW 2200 Softswitch hosts, and you are editing the file on the active host</li> <li>• <b>slave</b>—If you have two (active and standby) Cisco PGW 2200 Softswitch hosts, and you are editing the file on the standby host</li> <li>• <b>standalone</b>—If you have a simplex system</li> </ul> <p><b>Note</b> The value used is site specific. For example, use the values master and slave if you have two (active and standby) Cisco PGW 2200 Softswitch hosts. Enter <b>standalone</b> if you have a single-host system.</p> |
| *.numberOfThreads      | <p>Prior to Release 9.4(1), the number of threads generated by multithreaded processes such as the engine and the log master, is specified by entering one of the following values:</p> <ul style="list-style-type: none"> <li>• <b>0</b>—Single CPU (default)</li> <li>• <b>1</b>—Two CPUs</li> <li>• <b>2</b>—Four CPUs</li> </ul> <p><b>Note</b> If you have a multi-CPU system, the <b>engine.SysGeneratedCode</b> parameter must be left as <b>true</b> (the default).</p> <p>For Release 9.4(1) and up, this parameter is set automatically when you specify a Cisco PGW 2200 Softswitch type in the engine.SysVirtualSwitch parameter. Any attempt to modify this parameter is overwritten.</p>                                 |

| Parameter                        | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>*.ownTranspathId</b>          | <p>To identify the local Cisco PGW 2200 Softswitch host in a fault tolerant system, enter the same value that you used for *.transpathID.</p> <p><b>Note</b> If you have two Cisco PGW 2200 Softswitch hosts in a fault tolerant system, enter this value in the *.peerTranspathID field in the XECfgParm.dat file on the second host server. If you have a simplex system, leave this value blank.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>*.peerTranspathId</b>         | <p>To identify the peer Cisco PGW 2200 Softswitch host in a fault tolerant system, enter any one- or two-digit integer. The IDs must be unique in an active and standby pair.</p> <p><b>Note</b> If you have two Cisco PGW 2200 Softswitch hosts in a fault tolerant system, enter the same value that you used for *.transpathID in the XECfgParm.dat file of the second host server in this field. If you have a simplex system, leave it blank.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>*.sipModeSelectionControl</b> | <p>Sets SIP processing mode on the Cisco PGW 2200 Softswitch.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>1 (B2BUA/optional mode)—SIP-to-SIP calls are processed in B2BUA mode. You can select proxy mode later using a dial plan (A/B analysis).</li> <li>2 (Fixed Proxy Mode)—SIP-to-SIP calls are processed in proxy mode only.</li> </ul> <p>Default: 2</p> <p><b>Note</b> In order to use H.248 Protocol—Phase 2 Feature on Release 9.8(1), you must set this parameter to 1.</p>                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>*.stPort</b>                  | <p>Port number used between peer components or processes.</p> <p>Enter any unused port number (for example, <b>7000</b>). If your configuration uses a Cisco ITP-L, enter the port number on the Cisco ITP-L.</p> <p><b>Note</b> If you have two Cisco PGW 2200 Softswitch hosts in a failover configuration, enter a different number for this value in the XECfgParm.dat file on the secondary host (for example, <b>7001</b>).</p> <p><b>Note</b> On a new configuration, we recommend that this parameter be set to <b>0</b>. This value allows the Cisco ITP-L port to be defined using the <b>PEERPORT</b> parameter of the <b>SESSIONSET</b>.</p> <p><b>Note</b> <b>SESSIONSET</b> reads the port value that is defined. However, if an *.stPort value other than 0 is defined in XECfgParm.dat (for example, *.stPort=<b>7001</b>), the <b>SESSIONSET</b> value gets overridden by the value in XECfgParm.dat.</p> |

| Parameter                       | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>*.transpathId</b>            | <p>To identify the local Cisco PGW 2200 Softswitch host in a fault tolerant system, enter any one- or two-digit integer.</p> <p><b>Note</b> If you have two Cisco PGW 2200 Softswitch hosts in a fault tolerant system, this number must be different in the XECfgParm.dat file for each host.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>CustSpecificINAPHandling</b> | <p>Controls INAP (Intelligent Network Application Protocol) behavior, including advertised application context.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>• tinap</li> <li>• finap</li> <li>• rinap</li> <li>• sinap</li> </ul> <p>Default: Null</p> <p>To enable network transfer and DTMF transfer services, set this parameter to <b>sinap</b>. The following new CS2 application context is populated in the dialogue body of the INAP message:</p> <pre>itu-t(0) recommendation(0) q(17) q1228(1228) cs2(2) ac(3) id-ac-cs2-ssf-scfGenericAC(4) urn:oid:0.0.17.1228.2.3.4</pre>                                                                                                                                                                                                                                                                                                                                                               |
| <b>engine.SysVirtualSwitch</b>  | <p>To indicate whether the Cisco PGW 2200 Softswitch host functions as a signaling controller or a virtual switch controller, enter one of the following values:</p> <ul style="list-style-type: none"> <li>• <b>0</b>—Signaling controller (nailed trunks, no auditing is initiated)</li> <li>• <b>1</b>—Virtual switch controller (switched trunks)</li> </ul> <p><b>Note</b> During the startup of the Cisco PGW 2200 Softswitch software, this parameter is be set automatically to tune the system for optimal performance.</p> <p><b>Note</b> For Release 9.4(1) and up, the values of the parameters listed below are automatically set based on the Cisco PGW 2200 Softswitch type you select, to maximize performance for that configuration. Any attempt to change the values of these parameters is overwritten.</p> <pre>engine.SysMdlMemoryReduction engine.CALL_MEM_BLOCK_SIZE engine.CALL_MEM_CHUNK_SIZE *.CPUTimerInterval *.numberOfThreads</pre> |

## Specifying IP Addresses

To specify IP addresses, modify the following parameters in the first section of the XECfgParm.dat file:

**Note**

If there are two Ethernet interfaces defined on the Cisco PGW 2200 Softswitch, it is mandatory to have these on distinct subnets.

For example, consider the following configuration:



```
*.IP_AddrLocalA = 172.22.119.108
*.IP_AddrLocalB = 172.22.119.54
```

This is not a valid combination because they are on the same subnet. The following example illustrates a valid combination:

```
*.IP_AddrLocalA = 172.22.119.108
*.IP_AddrLocalB = 172.22.120.54
```

In this example, the subnet mask is 255.255.255.0 (or 255.255.255.128).

If the two Ethernet interfaces are on the same subnet, then one of them must be physically disconnected from the existing subnet and then connected to a different subnet. The new IP address must be appropriately configured on the system. Refer to the manual pages for the UNIX command **ifconfig** for more information.

| Parameter       | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *.IP_AddrLocalA | <p>Enter the first local IP address; used for checkpointing and switchover heartbeats.</p> <div>  <b>Caution</b> This address is the same value as *.IP_Addr1, and is the bge0 interface. </div> <div>  <b>Caution</b> No other machine on the network should have <b>*.IP_AddrLocalA set to 0.0.0.0.</b> </div> |
| *.IP_AddrPeerA  | <p>Enter the first corresponding peer IP address; used for checkpointing and switchover heartbeats.</p> <p><b>Note</b> If you have two Cisco PGW 2200 Softswitch hosts in a fault tolerant configuration, this value is set to the IP address of the second host.</p>                                                                                                                                                                                                                 |
| *.IP_AddrLocalB | <p>Enter the second local IP address; used for checkpointing and switchover heartbeats. This is the address of the bge1 interface.</p> <p><b>Note</b> If your configuration does not use a secondary Ethernet adapter, leave this address set to the default value, <b>0.0.0.0</b>.</p>                                                                                                                                                                                               |
| *.IP_AddrPeerB  | <p>Enter the second corresponding peer IP address; used for checkpointing and switchover heartbeats. This is the address of the bge1 interface on the second host.</p> <p><b>Note</b> If your configuration does not use a secondary Ethernet adapter, leave this address set to the default value, <b>0.0.0.0</b>.</p>                                                                                                                                                               |

| Parameter          | Modification                                                                                             |
|--------------------|----------------------------------------------------------------------------------------------------------|
| *.IP_Addr1         | Enter the IP address of the bge0 interface.                                                              |
| *.IP_Addr2         | Enter the IP address of the bge1 interface (if configured).                                              |
| *.IP_Addr3         | Enter the IP address of the bge2 interface (if configured).                                              |
| *.IP_Addr4         | Enter the IP address of the bge3 interface (if configured).                                              |
| *.Virtual_IP_Addr1 | Enter a virtual IP addresses for the Cisco PGW 2200 Softswitch used for SIP Failover Support (optional). |
| *.Virtual_IP_Addr2 | Enter a virtual IP addresses for the Cisco PGW 2200 Softswitch used for SIP Failover Support (optional). |

## Configuring Engine Parameters

For the engine to run correctly, you must modify the following parameters in the Engine section of the XECfgParm.dat file:

| Parameter                         | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>engine.CALL_MEM_BLOCK_SIZE</b> | Block of memory allocated per call.<br><br>Used by MDL.<br><br>Set automatically based on the type of Cisco PGW 2200 Softswitch selected in engine.SysVirtualSwitch. Any attempt to modify this value is overwritten.                                                                                                                                                                                                                                                                                                                    |
| <b>engine.CALL_MEM_CHUNK_SIZE</b> | Memory chunks allocated from the block of memory designated with <b>engine.CALL_MEM_BLOCK_SIZE</b> .<br><br>Set automatically based on the type of Cisco PGW 2200 Softswitch selected in engine.SysVirtualSwitch. Any attempt to modify this value is overwritten.                                                                                                                                                                                                                                                                       |
| <b>engine.SendHardwareBlock</b>   | To enable the Cisco PGW 2200 Softswitch to send hardware-oriented blocking messages for any blocks that originate from the media gateways: <ul style="list-style-type: none"> <li>• <b>true</b>—Sends hardware-oriented blocking messages for any blocks that originate from the media gateways.</li> <li>• <b>false</b>—Sends only maintenance-oriented blocking messages for all blocking cases (default).</li> </ul> <p><b>Note</b> The parameter is automatically added to the XECfgParm.dat file during the patch installation.</p> |

| Parameter                         | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>engine.SysCdrCollection</b>    | <p>Designates the format of CDRs.</p> <p>Values:</p> <ul style="list-style-type: none"> <li><b>true</b>—Invalid for Release 7.4 and above.</li> <li><b>false</b>—Generates binary format CDRs (default)</li> </ul> <p>Default: <b>false</b></p> <p><b>Note</b> Do not change this value. Setting this to a value of <b>true</b> for Release 7.4 and higher is not valid and may have deleterious effects on the system.</p>                                                                                                                                                                                                                                                                              |
| <b>engine.SysGRSTimerInterval</b> | <p>To specify the interval between blocks of Circuit Group Reset (GRS) messages when the engine.SysGRSBlockSize parameter is used, set to the value required (in milliseconds).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>engine.SysGRSBlockSize</b>     | <p>Used for flow control of all automatically generated GRS, CGB, and CGU messages which are generated by the Cisco PGW 2200 Softswitch during run time. Typically produced due to propagation of service state changes such as MGCP endpoints changing availability. Specifies the interval, in milliseconds, between blocks of GRS parameters when the engine.SysGRSBlockSize parameter is used. The timer interval runs from the start of sending the first GRS message in each block to the first message in the next block.</p> <p>This parameter operates independently for each SS7 route (each OPC/DPC pair).</p> <p>Value: Any integer</p> <p>Default: <b>0</b></p> <p>Example: <b>1000</b></p> |
| <b>engine.SysGeneratedCode</b>    | <p>To determine whether compiled or interpreted code is used, enter one of the following values:</p> <ul style="list-style-type: none"> <li><b>true</b>—System uses compiled code (default).</li> <li><b>false</b>—System uses interpreted code (used only for engineering and debugging).</li> </ul> <p><b>Note</b> Compiled code runs faster than interpreted code. Typically, this value should be <b>true</b>. If your configuration uses multiple CPUs, this value <i>must</i> be <b>true</b>.</p>                                                                                                                                                                                                  |
| <b>*.SysConnectDataAccess</b>     | <p>This parameter controls if data access is enabled or disabled and if the engine attempts to connect to the MMDB at startup.</p> <p>Set this parameter to <b>true</b> for calling scenarios where European LNP, A-number screening, or other features requiring real-time database access are used.</p> <p>If you do not need real-time database access, set this parameter to <b>false</b> to increase the available system memory that can be used for call processing.</p>                                                                                                                                                                                                                          |

## Setting the Call Cutoff Timer

The Cisco PGW 2200 Softswitch call cutoff timer is disabled by default. To set the call cutoff timer, modify the following parameter in the XECfgParm.dat file:

| Parameter         | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *.CallCutoffTimer | <p>Provides a global system-wide timer, which is started when a call is answered and runs for the pre-configured time. When it expires the call is released in both directions and the call is cleared. This parameter is not dynamically reconfigurable. You must restart your system.</p> <p>Valid values:</p> <ul style="list-style-type: none"> <li>Hours: <b>0</b> (default), <b>1–48</b> (using hour as the unit)</li> <li>Minutes: <b>0, 1–2880</b> (using minute as the unit)</li> <li>Seconds: <b>0, 1–1728000</b> (using second as the unit)</li> </ul> <p>Default: <b>0</b>—Disables the timer.</p> <p><b>Note</b> You can override this value using the first data word of the CALL_CUTOFF_TIMER result type.</p> |

## Enabling Call Screening



To initialize the database that stores call screening information, modify the following parameter in the Engine section of the XECfgParm.dat file:

| Parameter              | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *.SysConnectDataAccess | <p>Controls whether data access is enabled or disabled (whether the engine attempts to connect to the MMDB at startup).</p> <p>Values:</p> <ul style="list-style-type: none"> <li><b>true</b> = connect to MMDB</li> <li><b>false</b> = do not connect to MMDB</li> </ul> <p>Default: <b>false</b></p> <p><b>Note</b> In calling scenarios where Euro-LNP, A Number Screening, or other features requiring real time database access are required, this parameter must be set to <b>true</b>. Otherwise, it can remain <b>false</b> for an increase in the available system memory usable for call processing.</p> <p><b>Note</b> This parameter replaces the SysScreeningCheck parameter.</p> |



## Configuring Call Detail Record File Output

To configure call detail record (CDR) file output, modify the following parameters in the Data Dumper and Engine sections of the XECfgParm.dat file:

| Parameter                       | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>engine.CDRencodingFormat</b> | <p>To specify the call detail record (CDR) file encoding format, enter one of the following values:</p> <ul style="list-style-type: none"> <li>• <b>AnsiCDB</b>—North American (default)</li> <li>• <b>ItuCDB</b>—European</li> <li>• <b>CustCDB</b>—Custom</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>engine.CDRmessageTypes</b>   | <p>To specify the Call Detail Blocks (CDBs are the accounting records written at various points in a call) that are generated during a call, enter one of the following sets of values (each number represents a point in a call):</p> <ul style="list-style-type: none"> <li>• <b>1010, 1020, 1030, 1040, 1050, 1060, 1070, 1080</b>—These are considered the “event-based” set of values. Use this event-based list when you want to receive all CDR records at predefined points in the call. Although each of these CDBs can be specified independently, Cisco suggests that you use the event-based set as a “package” of CDBs for full accounting purposes.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> <b>Note</b> The event-based setting is required when operating the Cisco PGW 2200 Softswitch in conjunction with the BAMS adjunct.</p> </div> <ul style="list-style-type: none"> <li>• <b>1060, 1110</b>—Use this value if you want end-of-call summary-type records only.</li> <li>• <b>1071</b>—Use this set of values for BAMS measurements.</li> </ul> <p>See the “Detailed CDB Description” section in the <i>Cisco PGW 2200 Softswitch Release 9 Billing Interface Guide</i> for details on each CDB.</p> |
| <b>engine.CDRtimeStamp</b>      | <p>Specifies the time stamp unit in seconds or milliseconds.</p> <p>To specify the CDR file time-stamp unit, enter one of the following values:</p> <ul style="list-style-type: none"> <li>• <b>S</b>—Seconds.</li> <li>• <b>M</b>—Milliseconds (default). Use this parameter if your configuration uses TCAP or if you want the millisecond granularity in all of your CDR records.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> <b>Note</b> The <b>M</b> setting is mandatory when operating the Cisco PGW 2200 Softswitch in conjunction with the Cisco BAMS adjunct. The default is <b>M</b> in Cisco PGW 2200 Softswitch Release 9.8(1).</p> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## Configuring the Clearing Location and Default Location Parameters



The ClearingLocation and DefaultLocation parameters are used to determine a call's location value. If you require a value other than the default to be sent to the switch, use these parameters to override the Clearing Location and Default Location fields in the Call Context. For example, if you need to define a customer-specific default location for your system, set this value in the DefaultLocation parameter, which overrides the default location specified in the protocol type definition.



| Parameter               | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ClearingLocation</b> | <p>This property overrides the Clearing Location field in Call Context. Change this value if you need a value other than the default to be sent to the switch. Valid values are:</p> <ul style="list-style-type: none"> <li>• 0—The Cisco PGW 2200 Softswitch software uses the default Clearing Location in Call Context.</li> <li>• 1—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_USER</li> <li>• 2—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_PRIVATE_LOCAL</li> <li>• 3—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_PUBLIC_LOCAL</li> <li>• 4—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_TRANSIT</li> <li>• 5—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_PUBLIC_REMOTE</li> <li>• 6—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_PRIVATE_REMOTE</li> <li>• 7—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_INTERNATIONAL</li> <li>• 8—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_INTERWORKING</li> <li>• 9—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_LOCAL_INTERFACE</li> <li>• 10—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_LOCAL_LOCAL</li> <li>• 11—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_LOCAL_REMOTE</li> <li>• 12—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_PACKET_MANAGER</li> <li>• 13—The Cisco PGW 2200 Softswitch software overrides the Clearing Location in Call Context with LOCATION_UNKNOWN</li> </ul> |

| Parameter       | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DefaultLocation | <p>This property overrides the Default Location field in Call Context. Change this value if you need to define a customer-specific default location for your system that can differ from the default location set in the type definition of the protocol. Valid values are:</p> <ul style="list-style-type: none"> <li>• 0—The Cisco PGW 2200 Softswitch software uses the Default Location in Call Context</li> <li>• 1—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_USER</li> <li>• 2—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_PRIVATE_LOCAL</li> <li>• 3—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_PUBLIC_LOCAL</li> <li>• 4—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_TRANSIT</li> <li>• 5—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_PUBLIC_REMOTE</li> <li>• 6—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_PRIVATE_REMOTE</li> <li>• 7—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_INTERNATIONAL</li> <li>• 8—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_INTERWORKING</li> <li>• 9—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_LOCAL_INTERFACE</li> <li>• 10—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_LOCAL_LOCAL</li> <li>• 11—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_LOCAL_REMOTE</li> <li>• 12—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_PACKET_MANAGER</li> <li>• 13—The Cisco PGW 2200 Softswitch software overrides the Default Location in Call Context with LOCATION_UNKNOWN</li> </ul> |

## Configuring Switchover

To configure switchover, modify the following parameters in the **foverd** section of the XECfgParm.dat file.

| Parameter                  | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>foverd.conn1Type</b>    | <p>To set the connection type for connection number 1, enter <b>serial</b> or <b>socket</b>.</p> <p><b>Note</b> Typically, set this value to <b>socket</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>foverd.ipLocalPortA</b> | <p>To define the local port number used for IP communication, enter a unique number, keeping the following in mind:</p> <ul style="list-style-type: none"> <li>Typically, if <b>Type</b> is socket, set this value to <b>1051</b>.</li> <li>If you have two Cisco PGW 2200 Softswitch hosts in a fault tolerant configuration, enter the foverd.ipLocalPortA value in the foverd.ipPeerPortA field in the XECfgParm.dat file on the secondary host.</li> </ul> <p> <b>Caution</b> The value of foverd.ipLocalPortA must be unique for every host on the network. Otherwise, active and standby hosts cannot communicate properly. In the instance discussed here, no other machine on the network can have foverd.ipLocalPortA set to 1051. If that happens, the active and standby hosts cannot perform proper switchover.</p> |
| <b>foverd.ipPeerPortA</b>  | <p>To define the peer port number used for IP communication, enter a unique number, keeping the following in mind:</p> <ul style="list-style-type: none"> <li>Typically, if <b>Type</b> is socket, set this value to <b>1052</b>.</li> <li>If you have two Cisco PGW 2200 Softswitch hosts in a switchover configuration, enter the foverd.ipPeerPortA value in the foverd.ipLocalPortA field in the XECfgParm.dat file on the secondary host.</li> </ul> <p> <b>Caution</b> The value of foverd.ipPeerPortA must be unique for every host on the network. Otherwise, active and standby hosts cannot communicate properly. In the instance discussed here, no other machine on the network can have foverd.ipPeerPortA set to 1052. If that happens, the active and standby hosts cannot perform proper switchover.</p>      |
| <b>foverd.conn2Type</b>    | <p>To set the connection type for connection number 2, enter <b>serial</b> or <b>socket</b>.</p> <p><b>Note</b> Typically, set this value to <b>socket</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter                  | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>foverd.ipLocalPortB</b> | <p>To define the secondary local port number used for IP communication, enter a unique number, keeping the following in mind:</p> <ul style="list-style-type: none"> <li>Typically, if <b>Type</b> is socket, set this value to <b>1053</b>.</li> <li>If you have two Cisco PGW 2200 Softswitch hosts in a switchover configuration, enter this value in the <b>foverd.ipPeerPortB</b> field in the XECfgParm.dat file on the secondary host.</li> </ul> <p> <b>Caution</b> The value of <b>foverd.ipLocalPortB</b> must be unique for every host on the network. Otherwise, active and standby hosts cannot communicate properly. In the instance discussed here, no other machine on the network can have <b>foverd.ipLocalPortB</b> set to 1053. If that happens, the active and standby hosts cannot perform proper switchover.</p> |
| <b>foverd.ipPeerPortB</b>  | <p>To define the secondary local port number used for IP communication, enter a unique number, keeping the following in mind:</p> <ul style="list-style-type: none"> <li>Typically, if <b>Type</b> is socket, set this value to <b>1054</b>.</li> <li>If you have two Cisco PGW 2200 Softswitch hosts in a switchover configuration, enter this value in the <b>foverd.ipLocalPortB</b> field in the XECfgParm.dat file on the secondary host.</li> </ul> <p> <b>Caution</b> The value of <b>foverd.ipPeerPortB</b> must be unique for every host on the network. Otherwise, master and slave hosts cannot communicate properly. In the instance discussed here, no other machine on the network can have <b>foverd.ipPeerPortB</b> set to 1054. If that happens, the master and slave hosts cannot perform proper switchover.</p>    |
| <b>foverd.conn3Type</b>    | <p>To set the connection type for connection number 3, enter <b>serial</b> or <b>socket</b>.</p> <p><b>Note</b> Typically, set this value to <b>serial</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>foverd.conn3Addr</b>    | <p>To specify the address of the peer system, enter a location; for example, <b>/dev/term/a</b>.</p> <p>If your configuration does not use connection number 3, enter <b>/dev/null</b> (default).</p> <p><b>Note</b> If your configuration uses an 8-port connector as a serial connection for switchover, you must modify the read-write permissions for the connection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |


| Parameter                       | Modification                                                                                                                                                                                                                                                          |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>foverd.abswitchPort</b>      | To specify the port used for communication with the A/B switch, enter a location; for example, <b>/dev/term/a</b> .<br><br><b>Note</b> If your configuration does not use an A/B switch, use the default value (/dev/null).                                           |
| <b>foverd.heartbeatInterval</b> | Specifies the maximum time in milliseconds between heartbeat messages from the peer switchover daemon. This interval defines the frequency with which the switchover daemon exchanges heartbeat messages with its peer.<br><br>Default: 1000 milliseconds (1 second). |

**Note**

For more information on switchover, see the *Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide*.

## Initializing the Provisioning Object Manager

To configure the Provisioning Object Manager (POM), modify the following parameters in the POM section of the XECfgParm.dat file:

| Parameter           | Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>pom.dataSync</b> | <p>Used in a fault tolerant system to indicate that the POM should synchronize the provisioning data at startup.</p> <ul style="list-style-type: none"> <li>• If you have a standalone system, set this value to <b>false</b>.</li> <li>• If you have a fault tolerant system, set this value to <b>true</b>.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> <b>Caution</b> If pom.dataSync is set to true for a fault tolerant system, you must ensure that you are running the same version of the Cisco PGW 2200 Softswitch software on both active and standby machines. Otherwise, the wrong version of your data files may be copied to the other machine.</p> </div> <div style="margin-top: 10px;"> <p><b>Note</b> When the initial Cisco PGW 2200 Softswitch configuration on the active host is deployed, you must change the pom.dataSync parameter to true in the XECfgParm.dat file in the standby host. After setting this parameter to true, you can start the Cisco PGW 2200 Softswitch software on the standby host. As the Cisco PGW 2200 Softswitch software comes up, the data on the standby host is synchronized with the data on the active host and the active host goes into the standby state.</p> <p>To accommodate failover conditions where the current active host can become the standby host, you must also set the pom.dataSync parameter to true on the current active host.</p> </div> |
| <b>pom.port</b>     | <p>Used in a fault tolerant configuration to indicate the port number that the POM uses to communicate with its peer. Enter any integer from <b>4001</b> through <b>4050</b>, or <b>default</b>.</p> <p><b>Note</b> This is a platform-specific value and depends on your system installation. You should modify this value only if the default port (<b>4001</b>) is being used by another process or application.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## Configuring SCP Queries

The SCP translates routing information for the Advanced Intelligent Network (AIN) database queries over TCAP. This section provides instructions for selecting the type of translation you use to enable SCP database queries. If your site or network requires changes, you can enable SCP queries using the prov-ed:inservice command or by manually editing the parameters in the trigger.dat file. The trigger.dat file (located in /opt/CiscoMGC/etc) contains the message-sending table that contains translation values.

This section contains the following topics:

- [Before You Start, page 4-43](#)



- [Configuring the trigger.dat File Attributes, page 4-43](#)
- [Sample trigger.dat File, page 4-45](#)

**Warning**

**Do not edit trigger.dat file parameters that are not listed below, and remember that all parameters are case-sensitive. Otherwise, your system might not work as intended.**

**Note**

The following Bellcore Standards are supported for US 800 toll-free services:

IN/1 Toll Free Service support: GR-1428

AIN 0.1 Toll Free Service support: GR-2902

## Before You Start

If you are changing an ANSI query and you need a different Translation Type, you need to know the Translationtype value from the Global Title Translation tables on the Signal Transfer Point (STP). Get this value from the administrator of your STP.

## Modifying trigger.dat file parameters with provisioning commands

You can use the prov-ed:inservice command to modify the trigger.dat properties without editing the file directly. The command allows you to modify the service key, global title or subsystem number, global title format, or message sending name.

```
mml> prov-ed:inservice:name="ansi-ain-800-npa",skortcv=4,gtrssn="ROUTEBYGT",
gtformat="GTTT",msname="ansi-ain-800-npa"
```

For more information about the prov-ed:inservice command, refer to the *Cisco PGW 2200 Softswitch Release 9 MML Command Reference*.

## Configuring the trigger.dat File Attributes

**Note**

The trigger.dat file is not overwritten during software installation. All changes to the trigger.dat file are contained in a file called trigger.template that is installed with the new software. If you modify the trigger.dat file after installing a new software release, you need to view the trigger.template file and copy any changes in that file to your trigger.dat file.

**Caution**

Improper editing of the trigger.dat file can cause service interruption and prevent the Cisco PGW 2200 Softswitch from correctly performing SCP database queries.

You can configure the following Cisco PGW 2200 Softswitch trigger.dat file attributes to perform a Transaction Capabilities Application Part (TCAP) query:

- Translation Type

## Configuring the Translation Type Attribute

Perform the following steps to configure the Translation Type (translationType) attribute:

- 
- Step 1** Back up the trigger.dat file.
  - Step 2** Determine the Trigger Number that you need to edit. You can get this information from your network administrator.
  - Step 3** Navigate to directory /opt/CiscoMGC/etc.
  - Step 4** Open the trigger definition file in an ASCII text editor and search for the string *\$TriggerTable*.
  - Step 5** Starting after the *\$TriggerTable* line, count the number of rows equal to the TriggerType beginning from the number 1.




---

**Note** Do not count any row that is blank or that begins with a pound sign (#).

---

- Step 6** When you find your row, note down the second number in that row. This number is the index to the *\$MessageSending* table.




---

**Caution** You must verify that column 2 is equal to 2 or 3 before changing Translation Type. If column 2 is not equal to 2 or 3, this is not an ANSI trigger and Translation Type is not used.

---

- Step 7** Edit the file as follows:
  - a. In the *\$MessageSending* table, select translationType, in column 5 (see [Table 4-6](#)).
  - b. In the table for your translation type, change the value for translationType to a value from 0 through 255. You can get this information from your network administrator.

- Step 8** Save your changes and close the editor.

- Step 9** For your changes to take effect you must reboot the Cisco PGW 2200 Softswitch by entering the following command:

```
/etc/init.d/CiscoMGC start
```




---

**Note** If you have installed the Solaris DiskSuite package (CSCOh023) on your system, the messages below are displayed during system boot-up. They are normal Solaris DiskSuite start-up messages and do not indicate any problem with your system.

---

```
WARNING force load of misc /md-trans failed
WARNING force load of misc /md-raid failed
WARNING force load of misc /md-hotspares failed
WARNING force load of misc /md-sp failed
```

---

Table 4-6 \$MessageSending Table Values

| F1                                               | F2               | F3  | F4           | F5              | F6           | F7  | F8  | F9  | F10 | F11 | F12 | F13 | F14 | F15 | F16  |
|--------------------------------------------------|------------------|-----|--------------|-----------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| tcapType                                         | stpScpGroupIndex | msg | asn1Encoding | translationType | tcapBodyType | OS1 | OS2 | OS3 | OS4 | OS5 | OS6 | OS7 | OS8 | OS9 | OS10 |
| # MS 1: Customer 1 LNP                           |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 2                                                | 0                | 6   | 0            | 255             | 1            | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |
| # MS 2: Generic LNP                              |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 2                                                | 0                | 6   | 0            | 255             | 1            | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |
| # MS 3: Genesys 800                              |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 1                                                | 1                | 1   | 0            | 0               | 1            | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |
| # MS 4: ANSI AIN 800 NPA                         |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 2                                                | 0                | 6   | 0            | 255             | 1            | 4   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |
| # MS 5: ANSI AIN 800 NPA-NXX                     |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 2                                                | 0                | 6   | 0            | 255             | 1            | 4   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |
| # MS 6: ANSI AIN 800 NPA-NXX-XXX                 |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 2                                                | 0                | 6   | 0            | 255             | 1            | 4   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |
| # MS 7: ANSI AIN 800 Termination information     |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 2                                                | 0                | 5   | 0            | 255             | 1            | 5   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |
| # MS 8: ANSI PRE AIN 800                         |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 3                                                | 0                | 6   | 0            | 254             | 2            | 6   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |
| # MS 9: ANSI PRE AIN 800 Termination information |                  |     |              |                 |              |     |     |     |     |     |     |     |     |     |      |
| 3                                                | 0                | 5   | 0            | 254             | 2            | 7   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    |

## Sample trigger.dat File

```
#--/*****
#--/*
#--/* Default Table.trigger
#--/*
#--/*****

"$Id: Table.trigger,v 1.25 2000/05/30 14:52:20 rjeffers Exp $";
"Copyright (c) 2004, 2005 by Cisco Systems, Inc.."
41647269616E204B696E6773746F6E

#####
$TriggerTable
#####
All fields are pointers to records of other types
#
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12
MA IN RR1 RR2 RR3 RR4 RR5 RR6 RR7 RR8 RR9 RR10

#-----
TT 1: Customer 1 LNP
#-----
1 1 1 2 0 0 0 0 0 0 0 0
```

```

#-----
TT 2: Generic LNP
#-----
2 2 1 3 0 0 0 0 0 0 0 0

#-----
TT 3: Genesys 800
#-----
3 3 10 4 5 0 0 0 0 0 0 0

#-----
TT 4: ANSI AIN 800 NPA
#-----
4 4 10 6 7 0 0 0 0 0 0 0

#-----
TT 5: ANSI AIN 800 NPA-NXX
#-----
4 5 10 6 7 0 0 0 0 0 0 0

#-----
TT 6: ANSI AIN 800 NPA-NXX-XXXX
#-----
4 6 10 6 7 0 0 0 0 0 0 0

#-----
TT 7: ANSI AIN 800 Termination Information
#-----
5 7 10 0 0 0 0 0 0 0 0 0

#-----
TT 8: ANSI PRE AIN AIN 800
#-----
4 8 10 8 9 0 0 0 0 0 0 0

#-----
TT 9: ANSI PRE AIN 800 Termination Information
#-----
5 9 10 0 0 0 0 0 0 0 0 0

#-----
TT 10: ANSI PRE AIN AIN 800 SSN
#-----
4 10 10 11 9 0 0 0 0 0 0 0

#-----
TT 11: ANSI PRE AIN 800 Termination Information SSN
#-----
5 11 10 0 0 0 0 0 0 0 0 0

#-----
TT 12: CS1/INAP Based CLI Screening
#-----
6 12 15 12 13 14 0 0 0 0 0 0

#-----
TT 13: Specialized Resource Report for CS1/INAP Based CLI Screening
#-----
0 13 15 12 0 0 0 0 0 0 0 0

#-----
TT 14: INAP Free Phone Service (Service Key = 0)
#-----

```

```

7 14 10 16 0 0 0 0 0 0 0 0
#-----
TT 15: INAP LNP Service (Service Key = 1)
#-----
7 15 10 16 0 0 0 0 0 0 0 0
#-----
TT 16: INAP Carrier Pre-Selection Service (Service Key =2)
#-----
7 16 10 16 0 0 0 0 0 0 0 0
#-----
TT 17: INAP LNP for Norway
#-----
8 17 17 18 0 0 0 0 0 0 0 0
#-----
TT 18: INAP Prepaid Services InitialDP
#-----
9 18 19 20 24 28 0 0 0 0 0 0
#-----
TT 19: INAP Prepaid Services ApplyChargingReport(Approaching Time Period Expiry)
#-----
10 19 19 21 0 0 0 0 0 0 0 0
#-----
TT 20: INAP Prepaid Services EventReportBCSM
#-----
11 20 19 22 23 0 0 0 0 0 0 0
#-----
TT 21: INAP Prepaid Services ApplyChargingReport (Time Period Expired)
#-----
11 21 19 22 0 0 0 0 0 0 0 0
#-----
TT 22: INAP Prepaid Services ApplyChargingReport (Final End)
#-----
11 22 0 0 0 0 0 0 0 0 0 0
#-----
TT 23: INAP LNP for Portugal
#-----
12 23 25 26 27 0 0 0 0 0 0 0
#-----
TT24 : INAP CS1 Initial DP
#-----
13 24 29 30 31 33 32 0 0 0 0 0
#-----
TT25 : INAP CS1 Event Report (EventReportBCSM)
#-----
14 26 0 0 0 0 0 0 0 0 0 0
#-----
TT26 : INAP CS1 DisconnectForwardConnection(re-trigger to restore original trigger)
#-----
0 27 29 34 0 0 0 0 0 0 0 0
#-----
TT27 : INAP CS1 Final_End(Apply ChargingReport)

```

```

#-----
14 25 0 0 0 0 0 0 0 0 0 0
#-----
TT28 : INAP CS1 Post temp-connection handling
#-----
15 0 0 0 0 0 0 0 0 0 0 0
#-----
TT 29 : INAP CS2 Initial DP
#-----
13 29 29 30 31 33 32 36 37 38 39 0
#-----
TT 30: ANSI PRE AIN CNAM
#-----
4 30 41 40 0 0 0 41 0 0 0 0

#####
$MessageAction
#####
#
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
ACT1 REQ ACT2 REQ ACT3 REQ ACT4 REQ ACT5 REQ

#-----
MA 1: Customer 1 LNP
#-----
1 1 3 0 0 0 0 0 0 0
#-----
MA 2: Generic LNP
#-----
1 1 2 1 3 0 0 0 0 0
#-----
MA 3: Genesys 800
#-----
1 1 3 0 0 0 0 0 0 0
#-----
MA 4: ANSI AIN 800 / ANSI PRE AIN 800 /ANSI PRE AIN CNAM
#-----
1 1 3 0 0 0 0 0 0 0
#-----
MA 5: ANSI AIN 800 Termination Information / PRE AIN 800 Termination Information
#-----
4 1 0 0 0 0 0 0 0 0
#-----
MA 6: CS1/INAP Based CLI Screening InitialDP Query
#-----
3 0 0 0 0 0 0 0 0 0
#-----
MA 7: INAP Free Phone, LNP & Carrier Pre-Selection Services
#-----
3 0 0 0 0 0 0 0 0 0
#-----
MA 8: INAP LNP for Norway
#-----

```

```

3 0 0 0 0 0 0 0 0 0 0

#-----
MA 9: INAP Prepaid Services InitialDP
#-----
3 0 0 0 0 0 0 0 0 0 0

#-----
MA 10: INAP Prepaid Services ApplyChargingReport
#-----
0 0 0 0 0 0 0 0 0 0 0

#-----
MA 11: INAP Prepaid Services EventReportBCSM
#-----
0 0 0 0 0 0 0 0 0 0 0

#-----
MA 12: INAP LNP for Portugal
#-----
3 0 0 0 0 0 0 0 0 0 0

#-----
MA 13: INAP CS1 Copy STP_SCP_Index_From_Signal_Data
#-----
3 0 0 0 0 0 0 0 0 0 0

#-----
MA 14: INAP CS1 Reinstate Previous trigger
#-----
5 0 0 0 0 0 0 0 0 0 0

#-----
MA 15: INAP CS1 Reinstate Previous trigger
#-----
6 0 0 0 0 0 0 0 0 0 0

#-----
MA 16: INAP CS1 Provoke SCP Abort
#-----
7 0 0 0 0 0 0 0 0 0 0

#####
$MessageSendingName
#####
#
Name Index
cl-lnp 1
generic-lnp 2
genesys-800 3
ansi-ain-800-npa 4
ansi-ain-800-npa-nxx 5
ansi-ain-800-npanxxx 6
ansi-ain-800-ti 7
ansi-pre-ain-800 8
ansi-pre-ain-800-ti 9
ansi-pre-ain-800-ssn 10
ansi-pre-ain-800-ts 11
cs1-inap-cli-initdp 12
cs1i-nap-cli-srr 13
inap-freephon-initdp 14
inap-lnp-initdp 15
inap-precarr-initdp 16

```

```

inap-lnp-norway 17
inap-pp-initdp 18
inap-pp-charge-atexp 19
inap-pp-bcsm 20
inap-pp-charge-texp 21
inap-pp-charge-final 22
inap-lnp-portugal 23
inap-cs1-initdp 24
inap-cs1-dummy-25 25
inap-cs1-dummy-26 26
inap-cs1-dummy-27 27
inap-cs1-dummy-28 28
inap-cs2-initdp 29
ansi-pre-ain-cnam 30

```

```

#####
$MessageSending
#####
#
F1 F2 F3 F4 F5 F6 F7 F8 F9
F10 F11 F12 F13 F14 F15 F16
tcapType stpScpGroupIndex msg asn1Encoding translationType tcapBodyType OS1 OS2 OS3
OS4 OS5 OS6 OS7 OS8 OS9 OS10

#-----
MS 1: Customer 1 LNP
#-----
 2 0 6 0 255 1 1 0 0
0 0 0 0 0 0 0 0

#-----
MS 2: Generic LNP
#-----
 2 0 6 0 255 1 2 0 0
0 0 0 0 0 0 0 0

#-----
MS 3: Genesys 800
#-----
 1 1 1 0 0 1 3 0 0
0 0 0 0 0 0 0 0

#-----
MS 4: ANSI AIN 800 NPA
#-----
 2 0 6 0 255 1 4 0 0
0 0 0 0 0 0 0 0

#-----
MS 5: ANSI AIN 800 NPA-NXX
#-----
 2 0 6 0 255 1 4 0 0
0 0 0 0 0 0 0 0

```



```

#-----
MS 6: ANSI AIN 800 NPA-NXX-XXX
#-----
 2 0 6 0 255 1 4 0 0
0 0 0 0 0 0 0
#-----
MS 7: ANSI AIN 800 Termination information
#-----
 2 0 5 0 255 1 5 0 0
0 0 0 0 0 0 0
#-----
MS 8: ANSI PRE AIN 800
#-----
 3 0 6 0 254 2 6 0 0
0 0 0 0 0 0 0
#-----
MS 9: ANSI PRE AIN 800 Termination information
#-----
 3 0 5 0 254 2 7 0 0
0 0 0 0 0 0 0
#-----
MS 10: ANSI PRE AIN 800 SSN (Same as MS 8 but with SSN stuff)
#-----
 3 0 6 0 254 2 6 0 0
0 0 0 0 0 0 0
#-----
MS 11: ANSI PRE AIN 800 Termination information (Same as MS 9 but with SSN stuff)
#-----
 3 0 5 0 254 2 7 0 0
0 0 0 0 0 0 0
#-----
MS 12: CS1/INAP Based CLI Screening InitialDP Query
#-----
 1 0 1 0 200 1 8 0 0
0 0 0 0 0 0 0
#-----
MS 13: CS1/INAP Based CLI Screening SpecializedResourceReport
#-----
 1 0 2 0 200 1 9 0 0
0 0 0 0 0 0 0

```

```

#-----
MS 14: INAP InitialDP Query, Free Phone Service
#-----
1 0 1 0 0 1 0 0 1 110 0 0
0 0 0 0 0 0 0 0 0 0 0 0

#-----
MS 15: INAP InitialDP Query, LNP Service
#-----
1 0 1 0 0 1 0 0 1 110 0 0
0 0 0 0 0 0 0 0 0 0 0 0

#-----
MS 16: INAP InitialDP Query, Carrier Pre-Selection Service
#-----
1 0 1 0 0 1 0 0 1 110 0 0
0 0 0 0 0 0 0 0 0 0 0 0

#-----
MS 17: INAP LNP for Norway
#-----
1 0 1 0 0 1 0 0 1 111 0 0
0 0 0 0 0 0 0 0 0 0 0 0

#-----
MS 18: INAP Prepaid Services InitialDP
#-----
1 0 1 0 0 1 0 0 1 12 0 0
0 0 0 0 0 0 0 0 0 0 0 0

#-----
MS 19: INAP Prepaid Services ApplyChargingReport (Approaching Time Period Expiry)
#-----
1 0 2 0 0 2 0 0 3 13 0 0
0 0 0 0 0 0 0 0 0 0 0 0

#-----
MS 20: INAP Prepaid Services EventReportBCSM
#-----
1 0 2 0 0 2 0 0 1 14 0 0
0 0 0 0 0 0 0 0 0 0 0 0

#-----
MS 21: INAP Prepaid Services ApplyChargingReport (Time Period Expired)
#-----
1 0 2 0 0 2 0 0 3 13 0 0
0 0 0 0 0 0 0 0 0 0 0 0

```

```

#-----
MS 22: INAP Prepaid Services ApplyChargingReport (Final End)
#-----
1 0 3 0 0 3 13 0 0
0 0 0 0 0 0 0 0 0

#-----
MS 23: INAP LNP for Portugal
#-----
1 0 1 0 0 1 15 0 0
0 0 0 0 0 0 0 0 0

#-----
MS 24: INAP CS1 InitialDP
#-----
1 0 1 0 0 1 16 0 0
0 0 0 0 0 0 0 0 0

#-----
MS 25: INAP CS1 Final end (ApplyChargingReport,)
#-----
1 0 2 0 0 3 18 0 0
0 0 0 0 0 0 0 0 0

#-----
MS 26: INAP CS1 Continue, event report (EventReportBCSM)
#-----
1 0 2 0 0 1 17 0 0
0 0 0 0 0 0 0 0 0

#-----
MS 27: INAP CS1 (Dummy entry only to permit Message reception operation data access)
#-----
1 0 2 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0

#-----
MS 28: INAP CS1 (Dummy entry only to permit Message reception operation data access)
#-----
1 0 2 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0

#-----
MS 29: INAP CS2 InitialDP
#-----
1 0 1 0 0 1 16 0 0
0 0 0 0 0 0 0 0 0

```

```

#-----
MS 30 : ANSI PRE AIN CNAM
tcapType=PRE AIN, msg=query with permission , asn1Encoding=asn1_definite,
tcapBodyType=sequence, OS= 19
#-----
3 0 6 5 2 19 0 0 0
0 0 0 0 0 0

#####
$OperationSending
#####
#
F1 F2 F3 F4 F5 F6
F7
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag correlationRequired
PS

#-----
OS 1: Customer 1 LNP
#-----
6 1 100 3 4 0
1

#-----
OS 2: Generic LNP
#-----
6 1 100 3 4 0
2

#-----
OS 3: Genesys 800
#-----
1 1 0 0 1 0
3

#-----
OS 4: ANSI AIN 800
#-----
6 1 100 3 4 0
4

#-----
OS 5: ANSI AIN 800 Termination Information Should have
correlationRequired = 1
#-----
6 1 103 4 4 0
5

#-----
OS 6: ANSI PRE AIN 800

```

```

#-----
#-----
OS 6: ANSI PRE AIN 800 Termination Information
#-----
#-----
OS 7: ANSI PRE AIN 800 Termination Information
#-----
#-----
OS 8: CS1/INAP Based CLI Screening InitialDP Query
#-----
#-----
OS 9: CS1/INAP Based CLI Screening SpecializedResourceReport
#-----
#-----
OS 10: INAP Free Phone, LNP & Carrier Pre-Selection Services InitialDP Query
#-----
#-----
OS 11: INAP LNP for Norway
#-----
#-----
OS 12: INAP Prepaid Services InitialDP
#-----
#-----
OS 13: INAP Prepaid Services ApplyChargingReport
#-----
#-----
OS 14: INAP Prepaid Services EventReportBCSM
#-----

```

|    |   |   |    |   |   |
|----|---|---|----|---|---|
| 6  | 1 | 3 | 1  | 3 | 0 |
| 6  |   |   |    |   |   |
| 2  | 1 | 0 | 0  | 0 | 0 |
| 7  |   |   |    |   |   |
| 1  | 1 | 0 | 0  | 1 | 0 |
| 8  |   |   |    |   |   |
| 1  | 1 | 0 | 49 | 1 | 1 |
| 0  |   |   |    |   |   |
| 1  | 1 | 0 | 0  | 1 | 0 |
| 9  |   |   |    |   |   |
| 1  | 1 | 0 | 0  | 1 | 0 |
| 10 |   |   |    |   |   |
| 1  | 2 | 0 | 0  | 1 | 0 |
| 11 |   |   |    |   |   |
| 1  | 2 | 0 | 36 | 1 | 0 |
| 12 |   |   |    |   |   |

```

#-----
#-----
1 2 0 24 1 0
13

#-----
#-----
OS 15: INAP LNP for Portugal
#-----
#-----
1 1 0 0 1 0
14

#-----
#-----
OS 16: INAP CS1 InitialDP
#-----
#-----
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag correlationRequired
PS
1 2 0 0 1 0
15

#-----
#-----
OS 17: INAP CS1 EventReportBCSM
#-----
#-----
1 2 0 24 1 0
16

#-----
#-----
OS 18: INAP CS1 ApplyChargingReport
#-----
#-----
1 2 0 36 1 0
17

#-----
#-----
OS 19: ANSI PRE AIN CNAM
componentType=invoke last, opClass=success and fail report, opFamily=parameter
opSpecifier=1 for PRE AIN, opFlag=1.local/3.national/4 private, ps=18
#-----
#-----
6 1 129 1 3 0
18

#-----
#-----

#####
$ParameterSending
#####
#
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 F13 F14 F15 F16 F17 F18
F19 F20 F21 F22 F23 F24 F25 F26 F27 F28 F29 F30
PA1 REQ PA2 REQ PA3 REQ PA4 REQ PA5 REQ PA6 REQ PA7 REQ PA8 REQ PA9 REQ
PA10 REQ PA11 REQ PA12 REQ PA13 REQ PA14 REQ PA15 REQ

#-----
#-----

```

```

PS 1: Customer 1 LNP
#-----
100 1 101 1 102 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 2: Generic LNP
#-----
100 1 101 1 102 1 103 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 3: Genesys 800
#-----
200 1 201 1 202 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 4: ANSI AIN 800 (All types)
#-----
100 1 101 1 102 1 103 1 104 1 109 0 110 0 111 0 112 0
113 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 5: ANSI AIN 800 Termination Information
#-----
105 1 106 1 107 0 108 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 6: ANSI PRE AIN 800
#-----
17 1 2 1 16 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 7: ANSI PRE AIN 800 Termination Information
#-----
21 1 20 1 22 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 8: CS1/INAP Based CLI Screening
#-----
200 1 201 1 202 1 208 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----

```

```

PS 9: INAP Free Phone, LNP & Carrier Pre-Selection Services
#-----
200 1 201 1 202 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 10: INAP LNP for Norway
#-----
200 1 201 1 202 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 11: INAP Prepaid Services InitialDP
#-----
200 1 201 1 202 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 12: INAP Prepaid Services ApplyChargingReport
#-----
214 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 13: INAP Prepaid Services EventReportBCSM
#-----
217 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 14: INAP LNP for Portugal
#-----
200 1 201 1 202 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 15: INAP CS1 InitialDP
#-----
200 1 201 1 202 0 208 0 206 0 224 0 219 0 217 0 220 0
221 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 16: INAP CS1 EventReportBCSM
#-----
217 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----

```



```

PS 17: INAP CS1 ApplyChargingReport
#-----
214 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PS 18: ANSI PRE AIN CNAM
23=generic name, 17=service key
#-----
23 1 17 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#####
$ReceivedResponse
#####
All fields are pointers to records of other types
#
F1 F2
MR RA

#-----
RR 1: Customer 1 LNP / Generic LNP Default
#-----
0 1

#-----
RR 2: Customer 1 LNP 1st expected
#-----
1 2

#-----
RR 3: Generic LNP 1st expected
#-----
1 3

#-----
RR 4: Genesys 800 1st expected (Result)
#-----
2 6

#-----
RR 5: Genesys 800 2st expected (Error)
#-----
3 4

#-----
RR 6: ANSI AIN 800 With termination status notification
#-----
4 5

```

```

#-----
RR 7: ANSI AIN 800
#-----
5 6

#-----
RR 8: ANSI PRE AIN 800 With termination status notification
#-----
6 7

#-----
RR 9: ANSI PRE AIN 800
#-----
7 8

#-----
RR 10: ANSI AIN 800 / PRE AIN 800 Default
#-----
0 9

#-----
RR 11: ANSI PRE AIN 800 With termination status notification SSN
#-----
6 10

#-----
RR 12: CS1/INAP Based CLI Screening, Expected Response 1, End: Connect
#-----
8 11

#-----
RR 13: CS1/INAP Based CLI Screening, Expected Response 2, End: ConnectToResource,
PlayAnnouncement
#-----
9 13

#-----
RR 14: CS1/INAP Based CLI Screening, Expected Response 3, Conintue: ConnectToResource,
PlayAnnouncement
#-----
10 12

#-----
RR 15: CS1/INAP Based CLI Screening, Expected Response 3, Conintue: ConnectToResource,
PlayAnnouncement

```

```

#-----

0 13

#-----

RR 16: INAP Free Phone, LNP & Carrier Pre-Selection Services, Expected Response 1, End:
Connect
#-----

11 14

#-----

RR 17: INAP LNP for Norway, Unexpected Response (default action)
#-----

0 15

#-----

RR 18: INAP LNP for Norway, Expected Response (End, Connect)
#-----

12 16

#-----

RR 19: INAP Prepaid Services, Unexpected Response (default action)
#-----

0 17

#-----

RR 20: INAP Prepaid Services, Expected Response (Continue, Connect)
#-----

13 18

#-----

RR 21: INAP Prepaid Services, Expected Response (Continue, ApplyCharging)
#-----

14 18

#-----

RR 22: INAP Prepaid Services, Expected Response (Continue, ReleaseCall)
#-----

15 18

#-----

RR 23: INAP Prepaid Services, Expected Response (Continue, Connect)
#-----

16 18

#-----

```

```

RR 24: INAP Prepaid Services, Expected Response (Continue, FurnishChargeInformation,
ReleaseCall)
#-----

17 18

#-----

RR 25: INAP LNP for Portugal, Unexpected Response (default action)
#-----

0 19

#-----

RR 26: INAP LNP for Portugal, Expected Response (Continue, Continue)
#-----

18 20

#-----

RR 27: INAP LNP for Portugal, Expected Response (Continue, Connect)
#-----

19 21

#-----

RR 28: INAP-Based Prepaid Services, Expected Response (End, Connect)
#-----

20 18

#-----

RR 29: INAP CS1, Unexpected Response (default action)
#-----

0 22

#-----

RR 30: INAP CS1, Expected Response (Continue, Connect, ApplyCharging,
SendChargingInformation, RequestReportBCSMEEvent, FurnishCharging)
#-----

MR RA
21 23

#-----

RR 31: INAP CS1, Expected Response (Continue, CollectInformation +
RequestReportBCSMEEvent)
#-----

22 23

#-----

RR 32: INAP CS1, Expected Response (Continue, ReleaseCall)
#-----

23 26

```

```

#-----
RR 33: INAP CS1, Expected Response (Continue, RequestReportBCSMEvent,
EstablishTemporaryConnection)
#-----
24 24

#-----
RR 34: INAP CS1, Expected Response (Continue, DisconnectForwardConnection)
#-----
25 25

#-----
RR 35: INAP CS1, Expected Response (Continue, CallGap - not treated, just ignore)
#-----
0 27

#-----
RR 36: INAP CS2, Expected Response (DL, SL, MCS,DFCwithArg,RRBE, ML, CWA)
#-----
26 28

#-----
RR 37: INAP CS2, Expected Response (CTR,PA,RRBE,CWA)
#-----
27 29

#-----
RR 38: INAP CS2, Expected Response (DFCwithArg, ML, CTR, PA, CWA, RRBE)
#-----
28 30

#-----
RR 39: INAP CS2, Expected Response (CWA,RRBE,CON,CTR,PA)
#-----
29 31

#-----
RR 40: ANSI PRE AIN CNAM Response expected, Take the same action as AIN
#-----
30 32

#-----
RR 41: ANSI PRE AIN CNAM Response unexpected
#-----
0 32

#####
$MessageReceiving
#####

```

```

#
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 F13 F14 F15 F16 F17 F18
F19 F20 F21
MSG OR1 REQ OR2 REQ OR3 REQ OR4 REQ OR5 REQ OR6 REQ OR7 REQ OR8 REQ OR9
REQ OR10 REQ

#-----
MR 1: Customer 1 LNP / Generic LNP
#-----
#-----
8 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 2: Genesys 800 (Result)
#-----
#-----
3 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 3: Genesys 800 (Error)
#-----
#-----
3 3 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 4: ANSI AIN 800 with termination status notification
#-----
#-----
8 4 1 5 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 5: ANSI AIN 800
#-----
#-----
8 4 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 6: ANSI PRE AIN 800 with termination status notification
#-----
#-----
8 6 1 7 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 7: ANSI PRE AIN 800
#-----
#-----
8 6 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
#-----

```

```
MR 8: CS1/INAP Based CLI Screening, End Message w/ Connect
```

```
#-----
```

```
3 8 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0
```

```
#-----
```

```
MR 9: CS1/INAP Based CLI Screening, End Message w/ ConnectToResource, PlayAnnouncement
```

```
#-----
```

```
3 9 1 10 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0
```

```
#-----
```

```
MR 10: CS1/INAP Based CLI Screening, Continue Message w/ ConnectToResource,
PlayAnnouncement
```

```
#-----
```

```
2 9 1 10 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0
```

```
#-----
```

```
MR 11: INAP Free Phone, LNP & Carrier Pre-Selection Services, End Message w/ Connect
```

```
#-----
```

```
3 11 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0
```

```
#-----
```

```
MR 12: INAP LNP for Norway, Expected Response (End, Connect)
```

```
#-----
```

```
3 12 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0
```

```
#-----
```

```
MR 13: INAP Prepaid Services, Expected Response (Continue, Connect, ApplyCharging,
RequestReportBCSMEEvent, FurnishCharging)
```

```
#-----
```

```
2 13 1 14 1 15 1 16 1 0 0 0 0 0 0 0 0 0
0 0 0
```

```
#-----
```

```
MR 14: INAP Prepaid Services, Expected Response (Continue, ApplyCharging)
```

```
#-----
```

```
2 14 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0
```

```
#-----
```

```
MR 15: INAP Prepaid Services, Expected Response (Continue, ReleaseCall)
```

```
#-----
```

```
2 17 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0
```

```

#-----
MR 16: INAP Prepaid Services, Expected Response (Continue, Connect)
#-----
2 13 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 17: INAP Prepaid Services, Expected Response (Continue, ReleaseCall,
FurnishChargeInformation)
#-----
2 17 1 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 18: INAP LNP for Portugal, Expected Response(Continue, Continue)
#-----
2 18 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 19: INAP LNP for Portugal, Expected Response(Continue, Connect)
#-----
2 19 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 20: INAP-Based Prepaid Services, Expected Response (End, Connect)
#-----
3 13 1 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 21: INAP CS1 , Expected Response (Continue, Connect, ApplyCharging,
SendChargingInformation,RequestReportBCSMEEvent, FurnishCharging)
#-----
4 20 0 21 0 22 0 23 0 24 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 22: INAP CS1 , Expected Response (Continue, CollectInformation +
RequestReportBCSMEEvent)
#-----
4 26 1 27 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
MR 23: INAP CS1 , Expected Response (Continue, ReleaseCall or Continue and optional
RequestReportBCSMEEvent)

```



```

#-----
#-----
 4 25 0 30 0 27 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
#-----
MR 24: INAP CS1 , Expected Response (RRBE, ETC, FCI)
#-----
#-----
 4 23 0 28 1 24 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
#-----
MR 25: INAP CS1 , Expected Response (DFC, CONNECT, RRBE, FCI)
#-----
#-----
 4 29 0 20 0 23 0 24 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
#-----
MR 26: INAP CS2 , Expected Response (DL, SL, MCS,DFCwithArg,RRBE, ML, CWA)
#-----
#-----
 4 32 0 35 0 33 0 38 0 23 0 34 0 31 0 0 0 0 0
0 0

#-----
#-----
MR 27: INAP CS2 , Expected Response (CTR,PA,RRBE,CWA)
#-----
#-----
 4 37 0 36 0 23 0 31 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
#-----
MR 28: INAP CS2 , Expected Response (DFCwithArg, ML, CTR, PA, CWA, RRBE)
#-----
#-----
 4 38 0 34 0 37 0 36 0 31 0 23 0 0 0 0 0 0 0
0 0 0

#-----
#-----
MR 29: INAP CS2 , Expected Response (CWA,RRBE,CON,CTR,PA)
#-----
#-----
 4 31 0 23 0 20 0 37 0 36 0 0 0 0 0 0 0 0 0
0 0 0
4 23 1 20 0 37 0 36 0 0 0 0 0 0 0 0 0 0
0 0 0

#-----
#-----
MR 30: ANSI PRE AIN CNAM , msg=response
#-----
#-----
 8 39 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0

```

```

#####
$OperationReceiving
#####
#
F1 F2 F3 F4 F5 F6
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag PR
#-----
OR 1: Customer 1 LNP / Generic LNP
#-----
6 1 101 1 4 1
#-----
OR 2: Genesys 800 (Result)
#-----
1 1 0 20 1 2
#-----
OR 3: Genesys 800 (Error)
#-----
3 1 0 0 1 3
#-----
OR 4: ANSI AIN 800
#-----
6 1 101 1 4 4
#-----
OR 5: ANSI AIN 800 Request for status notification
#-----
6 1 103 5 4 5
#-----
OR 6: ANSI PRE AIN 800
#-----
6 1 4 1 3 6
#-----
OR 7: ANSI PRE AIN 800 Request for status notification
#-----
6 1 6 1 4 7
#-----
OR 8: CS1/INAP Based CLI Screening Connect Operation
#-----
1 1 0 20 1 8
#-----
OR 9: CS1/INAP Based CLI Screening ConnectToResource Operation
#-----
1 1 0 19 1 0
#-----
OR 10: CS1/INAP Based CLI Screening PlayAnnouncement Operation
#-----
1 1 0 47 1 9
#-----
OR 11: INAP Free Phone, LNP & Carrier Pre-Selection Services Connect Operation
#-----
1 1 0 20 1 10
#-----
OR 12: INAP LNP for Norway, Expected Response (Connect)

```

```

#-----
1 1 0 20 1 11

#-----
OR 13: INAP Prepaid Services, Expected Response (Connect)
#-----
1 2 0 20 1 12

#-----
OR 14: INAP Prepaid Services, Expected Response (ApplyCharging)
#-----
1 2 0 35 1 13

#-----
OR 15: INAP Prepaid Services, Expected Response (RequestReportBCSMEEvent)
#-----
1 2 0 23 1 14

#-----
OR 16: INAP Prepaid Services, Expected Response (FurnishCharging)
#-----
1 2 0 34 1 15

#-----
OR 17: INAP Prepaid Services, Expected Response (ReleaseCall)
#-----
1 2 0 22 1 16

#-----
OR 18: INAP LNP for Portugal, Expected Response (Continue)
#-----
1 1 0 31 1 17

#-----
OR 19: INAP LNP for Portugal, Expected Response (Connect)
#-----
1 1 0 20 1 18

#-----
OR 20: INAP CS1 , Expected Response (Connect)
#-----
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag PR
1 2 0 20 1 19

#-----
OR 21: INAP CS1 , Expected Response (ApplyCharging)
#-----
1 2 0 35 1 20

#-----
OR 22: INAP CS1 , Expected Response (SendChargingInformation)
#-----
1 2 0 46 1 21

#-----
OR 23: INAP CS1 , Expected Response (RequestReportBCSMEEvent)
#-----
1 2 0 23 1 22

#-----
OR 24: INAP CS1, Expected Response (FurnishCharging)
#-----
1 2 0 34 1 23

```

```

#-----
OR 25: INAP CS1, Expected Response (ReleaseCall)
#-----
1 2 0 22 1 24

#-----
OR 26: INAP CS1, Expected Response (CollectInformation)
#-----
1 2 0 27 1 0

#-----
OR 27: INAP CS1, Expected Response (RequestReportBCSMEvents)
#-----
1 2 0 23 1 25

#-----
OR 28: INAP CS1, Expected Response (EstablishTemporaryConnection)
#-----
1 2 0 17 1 26

#-----
OR 29: INAP CS1, Expected Response (DisconnectForwardConnection)
#-----
1 2 0 18 1 0

#-----
OR 30: INAP CS1, Expected Response (Continue operation)
#-----
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag PR
1 2 0 31 1 0

#-----
OR 31: INAP CS2, Expected Response (ContinueWithArgument operation)
#-----
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag PR
1 2 0 88 1 27

#-----
OR 32: INAP CS2, Expected Response (DisconnectLeg operation)
#-----
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag PR
1 2 0 90 1 28

#-----
OR 33: INAP CS2, Expected Response (MergeCallSegments operation)
#-----
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag PR
1 2 0 91 1 29

#-----
OR 34: INAP CS2, Expected Response (MoveLeg operation)
#-----
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag PR
1 2 0 93 1 30

#-----
OR 35: INAP CS2, Expected Response (SplitLeg operation)
#-----
componentType opClass opCodeFamily opCodeSpecifier opCodeFlag PR
1 2 0 95 1 31

#-----
OR 36: INAP CS2, Expected Response (PlayAnnouncement operation)
#-----

```

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```

205 1 1 206 1 1 204 1 3 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

#-----
PR 4: ANSI AIN 800 Result
#-----
102 1 1 110 0 2 113 0 2 114 1 2 115 1 2 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

#-----
PR 5: ANSI AIN 800 Status request
#-----
105 1 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

#-----
PR 6: ANSI PRE AIN 800 Result
#-----
8 0 2 4 1 1 18 0 2 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

#-----
PR 7: ANSI PRE AIN 800 Status request
#-----
20 1 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

#-----
PR 8: CS1/INAP Based CLI Screening Connect Parameters
#-----
205 1 1 208 0 1 210 0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

#-----
PR 9: CS1/INAP Based CLI Screening PlayAnnouncement Parameters

```

```

#-----
#-----
#-----
209 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
#-----
PR 10: INAP Free Phone, LNP & Carrier Pre-Selection Services Connect Prameters
#-----
#-----
#-----
205 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
#-----
PR 11: INAP LNP for Norway Connect Parameters
#-----
#-----
#-----
205 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
#-----
PR 12: INAP Prepaid Services Connect Parameters
#-----
#-----
#-----
205 1 1 202 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
#-----
PR 13: INAP Prepaid Services ApplyCharging Parameters
#-----
#-----
#-----
211 1 1 212 0 1 213 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
#-----
PR 14: INAP Prepaid Services RequestReportBCSMEEvent Parameters
#-----
#-----
#-----
216 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

```

```

#-----
#-----
PR 15: INAP Prepaid Services FurnishCharging Parameters
#-----
#-----
215 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0
#-----
#-----
PR 16: INAP Prepaid Services ReleaseCall Parameters
#-----
#-----
218 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0
#-----
#-----
PR 17: INAP LNP for Portugal Continue Parameters
#-----
#-----
0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0
#-----
#-----
PR 18: INAP LNP for Portugal Connect Parameters
#-----
#-----
205 1 1 210 1 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0
#-----
#-----
PR 19: INAP CS1 Connect Parameters
#-----
#-----
205 1 1 225 0 2 206 0 1 220 0 1 221 0 1 207 0 1
210 0 1 208 0 1 243 0 1 244 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0
#-----
#-----
PR 20: INAP CS1 ApplyCharging Parameters
#-----
#-----

```



```

 211 1 1 212 0 1 213 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

```

```

#-----
#-----

```

```

PR 21: INAP CS1 SendChargingInformation Parameters
#-----
#-----

```

```

 222 1 1 226 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

```

```

#-----
#-----

```

```

PR 22: INAP CS1 RequestReportBCSMEEvent Parameters
#-----
#-----

```

```

 216 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

```

```

#-----
#-----

```

```

PR 23: INAP CS1 FurnishCharging Parameters
#-----
#-----

```

```

 215 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

```

```

#-----
#-----

```

```

PR 24: INAP CS1 ReleaseCall Parameters
#-----
#-----

```

```

 218 1 1 245 0 1 246 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

```

```

#-----
#-----

```

```

PR 25: INAP CS1 RequestReportBCSMEEvent Parameters
#-----
#-----

```

```

 216 1 1 247 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0

```

```

#-----
#-----

```

```

PR 26: INAP CS1 Etc(Establish temporary connection) , Parameter

```

```

ParameterAssistingSSIPRoutingAddress, ServiceInteractionIndicators,
ItuAsn1EtcLegIDElem, ItuAsn1EtcCallSegmentIDElem, ItuAsn1EtcCarrierElem
#-----

223 1 1 207 0 1 253 0 1 254 0 1 229 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----

PR 27: INAP CS2 ContinueWithArgument parameters(ItuAsn1CwaLegIDElem)
#-----

236 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----

PR 28: INAP CS2 DisconnectLeg
Parameters(ItuAsn1DlLegToBeReleasedElem/ITU_ASN1_DL_LEG_TO_BE_RELEASED,
ItuAsn1DlCauseElem/ITU_ASN1_DL_CAUSE)
#-----

234 1 1 235 0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----

PR 29: INAP CS2 MergeCallSegments Parameters(SourceCallSegment, TargetCallSegment)
#-----

237 1 1 238 0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----

PR 30: INAP CS2 MoveLeg Parameters(CallSegmentId, LegId)
#-----

241 1 1 242 0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----

PR 31: INAP CS2 SplitLeg Parameters(CallSegmentId ,LegId)
#-----

```

```

 239 1 1 240 0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
#-----
PR 32: INAP CS1 PlayAnnouncement(InformationToSend, RequestAnnouncementComplete, LegId
CallSegmentId)
#-----
#-----

 248 1 1 249 0 1 263 0 1 264 0 1 250 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
#-----
PR 33: INAP CS1 ConnectToResource Parameters(serviceInteractionIndicator,
ResourceAddress,)
#-----
#-----

 233 0 1 257 0 1 258 0 1 259 0 1 260 0 1 261 0 1
262 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
#-----
PR 34: INAP CS1 DFC With Argument Parameters(dfcc legId or DFC callsegment id, party to
disconnect)
#-----
#-----

 255 0 1 256 0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#-----
PR 35: ANSI PRE AIN CNAM Result
23=GenericName(copy to CC), 8=carrier, 4=routing number, 18=billing indicators
#-----
#-----

 23 0 2 8 0 2 4 0 1 18 0 2 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#####
$ResponseAction
#####
#
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 F13 F14 F15
ACT1 REQ DAT ACT2 REQ DAT ACT3 REQ DAT ACT4 REQ DAT ACT5 REQ DAT

#-----
RA 1: Customer 1 LNP Default & Generic LNP Default
#-----
#-----

 4 1 2 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 2: Customer 1 LNP 1st Expected
#-----

```

```

#-----
4 1 2 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 3: Generic LNP 1st Expected
#-----
1 1 0 4 1 2 0 0 0 0 0 0 0 0 0
#-----
RA 4: Genesys (Error)
#-----
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 5: ANSI AIN 800 with termination status notification
#-----
2 0 1 4 1 3 0 0 0 0 0 0 0 0 0
#-----
RA 6: Genesys & ANSI AIN AIN 800
#-----
4 1 3 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 7: ANSI PRE AIN 800 with termination status notification
#-----
2 0 4 4 1 3 0 0 0 0 0 0 0 0 0
#-----
RA 8: ANSI PRE AIN 800
#-----
4 1 3 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 9: 800 Default
#-----
4 1 3 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 10: ANSI PRE AIN 800 with termination status notification SSN
#-----
2 0 5 4 1 3 0 0 0 0 0 0 0 0 0
#-----
RA 11: CS1/INAP Based CLI Screening, Connect reponse actions
#-----
4 1 6 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 12: CS1/INAP Based CLI Screening, Continue PlayAnnouncement reponse actions
#-----
7 1 7 7 1 8 6 1 9 6 1 10 6 1 11
#-----
RA 13: CS1/INAP Based CLI Screening, End PlayAnnouncement reponse actions
#-----
4 1 12 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 14: INAP Free Phone, LNP & Carrier Pre-Selection Services, Connect reponse actions
#-----
4 1 13 0 0 0 0 0 0 0 0 0 0 0 0
#-----

```

```

RA 15: INAP LNP for Norway, Unexpected Response
#-----
4 1 14 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 16: INAP LNP for Norway, Expected Response
#-----
4 1 15 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 17: INAP Prepaid Services, Unexpected Response
#-----
4 1 14 8 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 18: INAP Prepaid Services, Expected Response
#-----
4 1 16 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 19: INAP LNP for Portugal, Unexpected Response
#-----
4 1 14 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 20: INAP LNP for Portugal, Expected Response
#-----
4 1 17 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 21: INAP LNP for Portugal, Expected Response
#-----
4 1 18 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 22: INAP CS1, Unexpected Response
#-----
4 1 19 8 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 23: INAP CS1, Expected Response
#-----
4 1 20 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 24: INAP CS1, Expected Response(Continue,EstablishTempConnection, re-trigger)
#-----
4 1 20 2 1 21 0 0 0 0 0 0 0 0 0

#-----
RA 25: INAP CS1, Expected Response(Continue,DisconnectForwardConnection, re-trigger)
#-----
4 1 20 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 26: INAP CS1, Expected Response (In Release)
#-----
4 1 20 0 0 0 0 0 0 0 0 0 0 0 0

#-----
RA 27: INAP CS1, Expected Response (No action - ignoring call gap response)
#-----
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

```

```

#-----
RA 28: INAP CS2, Expected Response(DL, SL, MCS,DFCwithArg,RRBE, ML, CWA)
#-----
4 1 20 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 29: INAP CS2, Expected Response(CTR,PA,RRBE,CWA)
#-----
4 1 20 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 30: INAP CS2, Expected Response(DFCwithArg, ML, CTR, PA, CWA, RRBE)
#-----
4 1 20 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 31: INAP CS2, Expected Response(RRBE,CON,CTR,PA)
#-----
4 1 20 0 0 0 0 0 0 0 0 0 0 0 0
#-----
RA 32: CNAM (send action to LCM)
#-----
4 1 23 0 0 0 0 0 0 0 0 0 0 0 0

#####
$ActionData
#####
#
F1 F2 F3 F4 F5
#-----

AD 1: ANSI AIN 800 Data for RESULT_ACTION_RE_TRIGGER_VIA_LCM (to send termination
information)
Trg Pic Null Null Null
#-----
7 13 0 0 0

AD 2: ANSI LNP Data for RESULT_ACTION_SEND_ACTION_TO_LCM
Act Null Null Null NULL
#-----
1 0 0 0 0

AD 3: ANSI AIN / PRE AIN 800 Data for RESULT_ACTION_SEND_ACTION_TO_LCM
Act Null Null Null NULL
#-----
2 0 0 0 0

AD 4: ANSI PRE AIN 800 Data for RESULT_ACTION_RE_TRIGGER_VIA_LCM (to send termination
information)
Trg Pic Null Null Null
#-----
9 13 0 0 0

AD 5: ANSI PRE AIN 800 Data for RESULT_ACTION_RE_TRIGGER_VIA_LCM (to send termination
information) SSN
Trg Pic Null Null Null
#-----
11 13 0 0 0

AD 6: CS1/INAP Based CLI Screening Data for RESULT_ACTION_SEND_ACTION_TO_LCM information
Act Null Null Null Null

```

```

#-----
3 0 0 0 0

AD 7: CS1/INAP Based CLI Screening Data for RESULT_ACTION_RE_TRIGGER_VIA_LCM_COND
information
Cond Param Val Trg Pic
#-----
2 209 1 13 10

AD 8: CS1/INAP Based CLI Screening Data for RESULT_ACTION_RE_TRIGGER_VIA_LCM_COND
information
Cond Param Trg Pic Null
#-----
0 209 13 10 0

AD 9: CS1/INAP Based CLI Screening Data for RESULT_ACTION_SEND_ACTION_TO_LCM_COND
information
Cond Param Val Act Null
#-----
2 209 1 4 0

AD 11: CS1/INAP Based CLI Screening Data for RESULT_ACTION_SEND_ACTION_TO_LCM_COND
information
Cond Param Act Null Null
#-----
0 209 4 0 0

AD 11: CS1/INAP Based CLI Screening Data for RESULT_ACTION_SEND_ACTION_TO_LCM_COND
information
Cond Param Val Act Null
#-----
2 209 0 5 0

AD 12: CS1/INAP Based CLI Screening Data for RESULT_ACTION_SEND_ACTION_TO_LCM information
Act Null Null Null Null
#-----
5 0 0 0 0

AD 13: INAP Free Phone, LNP & Carrier Pre-Selection Services Data for
RESULT_ACTION_SEND_ACTION_TO_LCM information
Act Null Null Null Null
#-----
3 0 0 0 0

AD 14: INAP LNP for Norway Data for RESULT_ACTION_SEND_ACTION_TO_LCM information
(IN_RELEASE)
Act Null Null Null Null
#-----
5 0 0 0 0

AD 15: INAP LNP for Norway Data for RESULT_ACTION_SEND_ACTION_TO_LCM information
(IN_ROUTE)
Act Null Null Null Null
#-----
3 0 0 0 0

AD 16: INAP Prepaid Services Data for RESULT_ACTION_SEND_ACTION_TO_LCM information
(IN_PREPAID)
Act Null Null Null Null
#-----
6 0 0 0 0

AD 17: INAP LNP for Portugal Data for RESULT_ACTION_SEND_ACTION_TO_LCM information
(IN_NONE)

```

```

Act Null Null Null Null
#-----
0 0 0 0 0

AD 18: INAP LNP for Portugal Data for RESULT_ACTION_SEND_ACTION_TO_LCM information
(IN_ROUTE)
Act Null Null Null Null
#-----
3 0 0 0 0

AD 19: INAP CS1 Data for RESULT_ACTION_SEND_ACTION_TO_LCM information (IN_RELEASE)
Act Null Null Null Null
#-----
5 0 0 0 0

AD 20: INAP CS1 Data for RESULT_ACTION_SEND_ACTION_TO_LCM information (IN_INAP CS1)
Act Null Null Null Null
#-----
7 0 0 0 0

AD 21: INAP CS1 Data for RESULT_ACTION_RE_TRIGGER_VIA_LCM(Trigger26,PIC-Now)
Act Null Null Null Null
#-----
26 10 0 0 0

AD 22: INAP CS1 Data for RESULT_ACTION_RE_TRIGGER_VIA_LCM(Trigger24,PIC-Now)
Act Null Null Null Null
#-----
24 10 0 0 0

AD 23: ANSI PRE AIN CNAM Data for RESULT_ACTION_SEND_ACTION_TO_LCM information
(IN_CNAM)
Act Null Null Null Null
#-----
30 0 0 0 0

```

This completes the SCP configuration. Continue to the next section to initialize the call-screening database. If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x.

## Initializing the Call Screening Database

This section contains the following topics:

- [.odbc.ini File Information, page 4-83](#)
- [Setting Up Replication, page 4-83](#)
- [Troubleshooting the Main Memory Database Replication, page 4-87](#)



### Caution

Cisco does not support the direct use of TimesTen commands (files found in `/opt/TimesTen/32/bin`). Incorrect use of these commands can cause database corruption.

During installation, the installation script (**install.sh**) installs and initializes the Main Memory Database (MMDB) that the Cisco PGW 2200 Softswitch can use for the following:

- Store call-screening information for calling- and called-number analysis



- Ported Numbers
- Number Termination
- Multiple Dial Plan
- Advice of Charge II

You might want to perform white and black list screening to include or exclude calls from certain numbers. You can provision white lists that specify allowed A-numbers (calling numbers) or B-numbers (called numbers). Black lists block specified A-numbers (calling numbers) or B-numbers (called numbers). For more details, see the *Cisco PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

The call screening database is stored in the /opt/TimesTen/datastore directory. The database name is **howdydb**. The maximum database size, 256 MB, is specified in the .odbc.ini file shown in the [.odbc.ini File Information](#) section, below.



#### Caution

Do not change the database name.

## .odbc.ini File Information

The .odbc.ini file specifies the location of the database storage. Unless you installed the software to other than the default directory, the .odbc.ini file is located in the /opt/CiscoMGC/local directory. The following is an example of an .odbc.ini file:

```
[ODBC Data Sources]
howdydb=TimesTen 4.1 Driver
[howdydb]
Driver=/opt/TimesTen4.1/32/lib/libtten.so
DataStore= /opt/TimesTen4.1/datastore/howdydb
DurableCommits=0
ExclAccess=0
ThreadSafe=1
WaitForConnect=0
Size=256
[ODBC]
Trace=0
TraceFile=
Installdir=/opt/TimesTen4.1/32
```

## Setting Up Replication

If you have two Cisco PGW 2200 Softswitch hosts in a fault tolerant system, you must set up database replication between the two hosts. During replication, any updates applied to the database on one host are replicated on the other. Data is transferred real time and does not require committing or deploying a configuration.

Replication copies data changes to either database after the initial setup. If you have data in one database and want to retain it, go to the host that has the data that you want to retain (usually this is the active host), then follow the procedures below, [“Initializing Database Replication” section on page 4-85](#).



#### Note

Before you can initialize the databases, you must install the Cisco PGW 2200 Softswitch software on both machines.

## Network Requirements

In most replication schemes, you need to identify the name of the host machine on which your data store resides. The operating system translates this host name to an IP address. This section describes how to configure your host names to ensure they use the correct IP addresses.

### Identifying data store hosts (UNIX and VxWorks)

If your Unix or VxWorks host has a single IP address and hostname, you can use the host name returned by the `hostname` command on UNIX or the `hostname()` call on VxWorks. If a host contains multiple network interfaces (with different IP addresses), TimesTen replication tries to connect to the IP address in the same order as returned by the `gethostbyname()` call on UNIX or the `hostGetByName()` call on VxWorks. It will try to connect using the first address; if a connection cannot be established, it tries the remaining addresses in order until a connection is established. TimesTen replication uses this same sequence each time it establishes a new connection to a host. If a connection to a host fails on one IP address, TimesTen replication attempts to re-connect (or fall back) to another IP address for the host in the same manner described above.

There are two basic ways you can configure a host to use multiple IP addresses on UNIX platforms: DNS or `/etc/hosts` files. On VxWorks platforms you use the `hostAdd()` call. For example, the following entry in the `/etc/hosts` file on a UNIX platform describes a server named `Machine1` with two Ethernet IP addresses:

```
10.10.98.102 Machine1
192.168.1.102 Machine1
```

To specify the same configuration for DNS, your entry in the domain zone file would look like:

```
Machine1 IN A 10.10.98.102
IN A 192.168.1.102
```

In either case, you only need to specify `Machine1` as the hostname in your replication scheme and replication will use the first available IP address when establishing a connection. In an environment in which multiple IP addresses are used, you can also assign multiple host names to a single IP address in order to restrict a replication connection to a specific IP address. For example, you might have an entry in your `/etc/hosts` file that looks like:

```
10.10.98.102 Machine1
192.168.1.102 Machine1 RepMachine1
```

Or a DNS zone file that looks like:

```
Machine1 IN A 10.10.98.102
IN A 192.168.1.102
RepMachine1 IN A 192.168.1.102
```

Should you want to restrict replication connections to IP address 192.169.1.102 for this host, you can specify `RepMachine1` as the hostname in your replication scheme. (Another option is to simply specify the IP address as the hostname in the `CREATE REPLICATION` statement used to configure your replication scheme.)

The following are example hosts files from an active Cisco PGW 2200 Softswitch host and an associated peer Cisco PGW 2200 Softswitch host:

#### Active Cisco PGW 2200 Softswitch Host `/etc/hosts`

```
27.0.0.1 localhost
192.168.11.1 UK-A-Netra1125-1 loghost
192.168.12.1 UK-A-Netra1125-1.hme1
```

```
192.168.11.2 UK-A-Netra1125-2
192.168.12.2 UK-A-Netra1125-2.hme1 UK-A-Netra1125-2 <----- Peer PGW hostname
```

#### Peer Cisco PGW 2200 Softswitch Host /etc/hosts

```
127.0.0.1 localhost
192.168.11.2 UK-A-Netra1125-2 loghost
192.168.12.2 UK-A-Netra1125-2.hme1
192.168.11.1 UK-A-Netra1125-1 1
92.168.12.1 UK-A-Netra1125-1.hme1 UK-A-Netra1125-1 <----- Peer PGW hostname
```

## Initializing Database Replication

To set up the initial replication, perform the following steps:

**Step 1** Log in to the active host as **mgcusr** and enter the following command:

```
% setup_replication.sh standbyhost active
```

Where *standbyhost* is the name (not IP address) of your standby host. In the example below, the active host is *hostx* and the standby host is *hosty*.



#### Caution

Do not use IP addresses when setting up database replication. If you do, replication will fail.



#### Note

If the machine on which the Cisco PGW 2200 Softswitch software is installed has several different names, make sure the argument that you supply to the `setup_replication.sh` script matches the output of the Unix command **hostname**.

#### Example 4-1 Initializing Database Replication on the Active Host

```
hostx% setup_replication.sh hosty active

Setting up replication to node hosty for DSN howdydb
Adding cisco.whitelist_a
Adding cisco.blacklist_a
Adding cisco.whitelist_b
Adding cisco.blacklist_b
Adding cisco.portednumbers
Adding cisco.numberterm
RAM Residence Policy : inUse
RAM Residence Grace (Secs) : 0
Manually Loaded In Ram : False
Purge Logs for Data Store : True
Logging Enabled : True
Replication Manually Started : True
```

**Step 2** Log in to the standby host as the root user and stop the Cisco PGW 2200 Softswitch software by entering the following UNIX command:

```
/etc/init.d/CiscoMGC stop
```

**Step 3** Log back in to the standby host as **mgcusr**.

**Step 4** At the standby host, enter the following command:

```
% setup_replication.sh activehost standby
```

where *activehost* is the name (not IP address) of your active host. In the example below, the active host is *hostx* and the standby host is *hosty*.



**Caution**

Do not use IP addresses when setting up database replication. If you do, replication will fail.

#### Example 4-2 Initializing Database Replication on the Standby Host

```
Configuring replication for DSN=howdydb
Restoring file /opt/TimesTen4.1/datastore/howdydb.ds0 from backup
Restoring file /opt/TimesTen4.1/datastore/howdydb.log0 from backup
RAM Residence Policy :inUse
Manually Loaded In Ram :False
Replication Agent Policy :manual
Replication Manually Started :True
Oracle Agent Policy :manual
Oracle Agent Manually Started :False
Replication setup completed.
```



**Note**

If the replication setup on the standby host fails, you must run `delete_replication.sh` on both active and standby hosts. Then change the value of the `TTREPPORT` variable from 2890 to 2891 in the `setup_replication.sh` script on both active and standby hosts and save your changes. Perform the whole procedure again.

**Step 5** Start the both active and standby Cisco PGW 2200 Softswitch as root:

```
/etc/init.d/CiscoMGC start
```

Proceed to [“Verifying Database Replication”](#).

## Verifying Database Replication

To verify that replication is working, perform the following steps:

**Step 1** Log in to the active host and start an MML session by entering **mml**.

**Step 2** Add a test entry into the B white list database using the `numan-add` MML command. For example:

```
mml> numan-add:bwhite:custgrpId="S018",svcname="testsvc",cli="9998"
```

Text similar to the following is displayed:

```
VSC-01 - Media Gateway Controller 2000-08-30 11:31:25
M COMPLD
 "bwhite"
;
```

**Step 3** Delete the test entry using the `numan-dlt` MML command.

```
mml> numan-add:bwhite:custgrpId="S018",svcname="testsvc",cli="9998"
```

**Step 4** Log in to the standby host and start an MML session by entering **mml**.

- Step 5** Enter the `numan-rtrv` MML command to verify that the entry you added in [Step 4](#) was replicated to the database on the standby host. For example:

```
mml> numan-rtrv:bwhite:custgrpid="S018",svcname="testsvc",cli="9998"
```

Text similar to the following is displayed:

```
VSC-01 - Media Gateway Controller 2000-08-30 11:33:52
M RTRV
"session=test:bwhite"
/* The cli :9998: exists. */
;
```

## Troubleshooting the Main Memory Database Replication

If you have problems during replication, try stopping and restarting the replication as follows:

- Step 1** Stop the replication by entering:

```
/etc/init.d/ttreplic stop
```

- Step 2** Restart the replication by entering:

```
/etc/init.d/ttreplic start
```

## Displaying the Main Memory Database Replication Status

The script `replication_status.sh` displays the status of the MMDB replication, if it is configured.

Run the script by typing the following command:

```
% ./replication_status.sh
```

The output shows the following replication status:

| Peer name | Host name | Port | State | Proto |
|-----------|-----------|------|-------|-------|
| HOWDYDB   | VA-DEALE  | Auto | Start | 5     |

| Last Msg Sent | Last Msg Recv | Latency | TPS | RecordsPS | Logs |
|---------------|---------------|---------|-----|-----------|------|
| -             | -             | -1.00   | -1  | -1        | 1    |



### Note

If the value for Last Msg Recv is more than a few seconds, or Logs is more than 1, then this indicates that replication is not occurring.

## Verifying Database Synchronization

The script `db_count.sh` provides the number of records configured in each of the database tables. This is useful for checking whether two machines have the same database data configured in them.

Run the script by typing the following command:

```
% ./db_count.sh
```

The output shows the rows counted in each database table:

Counting the rows in each database table.

```
CISCO.ANNOUNCEMENT < 0 >
CISCO.A_CHARGE_ORIGIN < 0 >
CISCO.A_NUMBERDIALPLANSELECTION < 0 >
CISCO.BLACKLIST_A < 0 >
CISCO.BLACKLIST_B < 0 >
CISCO.CBBOOKINGINFO < 0 >
CISCO.CBMONITORINGINFO < 0 >
CISCO.CLIPADDRESS < 0 >
CISCO.CLIPREFIX < 0 >
CISCO.FULLNUMBERTRANSLATION < 0 >
CISCO.H323IDDIVFROM < 0 >
CISCO.LIENTRIES < 0 >
CISCO.NUMBERTERM < 0 >
CISCO.PORTEDNUMBERS < 0 >
CISCO.SCRIPT < 0 >
CISCO.WHITELIST_A < 0 >
CISCO.WHITELIST_B < 0 >
```

## Synchronizing Databases

If you have data in the databases in the active and standby hosts, but both databases are out of sync or do not match, re-synchronize both databases by following the steps listed below. Otherwise, contact Cisco TAC for assistance in merging the databases.

Assuming the active host is the "better" database, do the following on the standby host:

- 
- Step 1** Log in as **root**.
  - Step 2** Stop the Cisco PGW 2200 Softswitch software by entering the following command:  

```
/etc/init.d/CiscoMGC stop
```
  - Step 3** Stop MMDB replication by entering the following command:  

```
/etc/init.d/ttreplic stop
```
  - Step 4** Copy the active host database to the standby host database by entering the following command as mgusr:  

```
% setup_replication <active host> standby
```
  - Step 5** Start the Cisco PGW 2200 Softswitch by entering the following command:  

```
/etc/init.d/CiscoMGC start
```
- 

## Checking for Installation Errors

If you still have problems, retry the commands listed in the [“Verifying Database Replication” section on page 4-86](#). If your output differs from the example in that section, or if you suspect problems or errors in the database installation, try the following:

- 
- Step 1** Ensure that the database is installed in the /opt/TimesTen directory.

- Step 2** Check the log file for installation errors. (The log file is in the directory /var/adm/MGC\_install.log.)

## Reinstalling CSCOGa002

If you experience database errors such as an incorrect timestamp after completing the “[Checking for Installation Errors](#)” section on page 4-88, you need to reinstall the CSCOGa002 package, which contains the Cisco PGW 2200 Softswitch database components. Follow these steps to reinstall the CSCOGa002 package:

- Step 1** Remove the CSCOGa002 package as root using the **pkgrm** command. To remove the package file, enter the following command:

```
pkgrm CSCOGa002
```

- Step 2** Reinstall the package using the **pkgadd** command by entering the following command:

```
pkgadd -d CSCOGa002.pkg
```

This completes the CSCOGa002 package installation. If you have questions or need assistance, see the “[Obtaining Documentation and Submitting a Service Request](#)” section on page x. If you do not need to install or remove patches, proceed to configure your Cisco ITP-Ls.

## Configuring Cisco ITP-Ls



### Note

For configuration information, refer to the document *Cisco IP Transfer Point - LinkExtender* and the *Release Notes for Cisco PGW 2200 Softswitch Release 9.8(1)*.

## Configuring Disk Monitor During Initial Software Configuration

The setting of the disk monitor parameters in the XECfgParm.dat file typically occurs while you are performing the initial configuration procedures for your Cisco PGW 2200 Softswitch software. To configure the disk monitor settings in the XECfgParm.dat file during initial software configuration, perform the following steps:

- Step 1** While configuring your settings in the XECfgParm.dat file, find the disk monitor parameters in the file (they are near the end of the file).
- Step 2** To change the number of days to preserve logged data before trimming is initiated, modify the value of the diskmonitor.Limit parameter. The default value is 7.
- Step 3** To change the list of optional file systems that are checked by the disk monitor script, modify the value of the diskmonitor.OptFileSys parameter.



### Note

Files in optional directories are not trimmed by disk monitor.

- Step 4**    To change the percentage of disk usage at which alarming and disk trimming is initiated, modify the value of the `diskmonitor.Threshold` parameter. The default value is 80.
- Step 5**    To change the number of days that finished CDR files are kept in the log directory, modify the value of the `diskmonitor.CdrRmFinished` parameter. The default value is 0, which means that finished CDRs are immediately sent to the spool directory.
- Step 6**    If you want to change what action is taken once the number of days threshold set in the `diskmonitor.Limit` parameter is reached, change the value of the `diskmonitor.SoftLimit` parameter. If this parameter is set to *true*, disk monitor decrements the value in the `diskmonitor.Limit` parameter one day at a time (that is, from 7 down to 6 then down to 5 and so on), until the utilization level drops below the threshold. If this parameter is set to *false*, disk monitor exits and the system generates a DISK alarm. The default value is *true*.
- Step 7**    To change the number of days that core dump files are kept in the log directory, modify the value of the `diskmonitor.CoreRmDays` parameter. The default value is 1, which means that core dump files are kept for one day before disk monitor removes them automatically.
- Step 8**    You can control the maximum number of configurations that can be stored in the configuration library using the `diskmonitor.CfgRmDirs` parameter. The valid values are the range of integers from 3 through 64. The default value is 64. This parameter is not present in the `XECfgParm.dat` file initially. If you want to modify the value, you must enter the parameter manually into the file.



**Note**    If you want to ensure the proper functioning of the **prov-sync** MML command, set this parameter to a value between 50 and 60.



**Note**    Entering a value outside of the range of valid values (3 through 64) disables monitoring of the number of entries stored in the configuration library.

- Step 9**    Save your changes.

This completes the procedures for configuring disk space monitoring. If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x.

# Configuring the Data Dumper

The data dumper is a Cisco PGW 2200 Softswitch software function that controls the destinations for active and archived log files for CDRs, measurements, and alarms, and controls when the active files are archived. The data dumper runs automatically and works correctly with a default configuration. However, you can customize the dumper settings by editing the **dmprSink.dat** file.


The following is an example of the contents of the `dmprSink.dat` file:

```
"callDetail" bin "cdr" "../var/log" "../var/spool" 1000 0 15
"measReport" csv "meas" "../var/log" "../var/spool" 500 0 15
"almState" csv "alm" "../var/log" "../var/spool" 500 0 15
```

[Table 4-7](#) lists the fields that can be modified depending on your needs.



**Table 4-7 Dumper Sink Log File Parameters**

| Field Name                                                                                                                                                                   | Default Value | Description                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| maxRecs                                                                                                                                                                      | 1000          | The maximum number of records a file can contain before it is flushed or moved to the spool area. If this value is set to 0, the number of records is unlimited. You can improve system performance by increasing the value of this record to a larger value, such as 50000. This results in fewer log record files being generated during periods of high call volume. |
| maxSize                                                                                                                                                                      | 0             | The maximum size of the file in bytes before it is moved to the spool area. If this value is set to 0, the size of the file is limited only by the disk space available.                                                                                                                                                                                                |
| maxTime                                                                                                                                                                      | 15            | The maximum time, in minutes, the file is allowed to remain open, before it is flushed or moved to the spool area. If there is no data in the file, it will not be flushed when the time limit expires. If this value is set to 0, there is no time limit.                                                                                                              |
|                                                                                                                                                                              |               | <b>Note</b> One or more of the above fields <i>must</i> be set to a value other than zero (0) for each record in the dmprSink.dat file.                                                                                                                                                                                                                                 |
|  <b>Caution</b> Do not modify or change any of the following log file configuration values. |               |                                                                                                                                                                                                                                                                                                                                                                         |
| recordFormat                                                                                                                                                                 | csv           | The translation of the records being placed in the capture file. Valid values are csv (comma-separated values) or bin (binary).                                                                                                                                                                                                                                         |
| logDirectory                                                                                                                                                                 | /var/log      | The directory where the current dumper logs reside.                                                                                                                                                                                                                                                                                                                     |
| logSpoolDir                                                                                                                                                                  | /var/spool    | The directory to which historic logs are copied after being closed.                                                                                                                                                                                                                                                                                                     |

To configure the **dmprSink.dat** file fields, use the following procedure:

- Step 1** Log into a Cisco PGW 2200 Softswitch as **root** if you are not already logged in.
- Step 2** Change to the /opt/CiscoMGC/etc directory by entering the following UNIX command:
- ```
# cd /opt/CiscoMGC/etc
```
- Step 3** Use a text editor, such as vi, to open and edit the **dmprSink.dat** file fields you want to change.



Note If you are going to use the Cisco BAMS to collect CDRs, proceed to the [“Configuring the Data Dumper to Support Cisco BAMS”](#) section on page 4-92, for information on how to configure the data dumper to support Cisco BAMS.

- Step 4** Save your changes and exit the text editor.
- Step 5** Change to the /opt/CiscoMGC/etc/CONFIG_LIB/new directory by entering the following UNIX command:
- ```
cd /opt/CiscoMGC/etc/CONFIG_LIB/new
```
- Step 6** Stop and start the standby host.
- Step 7** Perform sw-over on the active host.

- Step 8** Stop and start the newly-standby host (formerly active host).
  - Step 9** Repeat [Step 3](#) and [Step 4](#) for the version of dmprSink.dat stored in this directory.
  - Step 10** Change to the /opt/CiscoMGC/etc/active\_link directory by entering the following UNIX command:  
# `cd /opt/CiscoMGC/etc/active_link/`
  - Step 11** Repeat [Step 3](#) and [Step 4](#) for the version of dmprSink.dat stored in this directory.
  - Step 12** Repeat [Step 1](#) through [Step 10](#) on this second Cisco PGW 2200 Softswitch if your system is equipped with a second Cisco PGW 2200 Softswitch.
- 

This completes the procedures for configuring the data dumper. If your system uses BAMS, continue to the [“Configuring the Data Dumper to Support Cisco BAMS”](#) section on page 4-92. If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x.

## Configuring the Data Dumper to Support Cisco BAMS

If your system will use Cisco BAMS to retrieve CDRs from the Cisco PGW 2200 Softswitch, perform the following procedure to configure the data dumper to support Cisco BAMS:

- 
- Step 1** Log into a Cisco PGW 2200 Softswitch as **root** if you are not already logged in.
  - Step 2** Change to the /opt/CiscoMGC/etc directory by entering the following UNIX command:  
# `cd /opt/CiscoMGC/etc`
  - Step 3** Use a text editor, such as vi, to open and edit the **dmprSink.dat** file fields you want to change.
  - Step 4** Save your changes and exit the text editor.
  - Step 5** Change to the /opt/CiscoMGC/etc/CONFIG\_LIB/new directory by entering the following UNIX command:  
# `cd /opt/CiscoMGC/etc/CONFIG_LIB/new`
  - Step 6** Stop and start the standby host.
  - Step 7** Perform sw-over on the active host.
  - Step 8** Stop and start the newly-standby host (formerly active host).
  - Step 9** Repeat [Step 3](#) and [Step 4](#) for the version of dmprSink.dat stored in this directory.
  - Step 10** Change to the /opt/CiscoMGC/etc/active\_link directory by entering the following UNIX command:  
# `cd /opt/CiscoMGC/etc/active_link/`
  - Step 11** Repeat [Step 3](#) and [Step 4](#) for the version of dmprSink.dat stored in this directory.
  - Step 12** Repeat [Step 1](#) through [Step 10](#) on this second Cisco PGW 2200 Softswitch if your system is equipped with a second Cisco PGW 2200 Softswitch.
- 

This completes the procedures for configuring the data dumper to support BAMS. If you have questions or need assistance, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page x.



## CHAPTER 5

# Migrating to Solaris 10 and Cisco PGW 2200 Softswitch Software Release 9.8

---

This chapter describes how to migrate your Cisco PGW 2200 Softswitch to the Solaris 10 operating system and Cisco PGW 2200 Softswitch software Release 9.8.

This chapter contains the following information:

- [Conditions for Migration, page 5-1](#)
- [Cautions and Notes, page 5-2](#)
- [Required Software, page 5-3](#)
- [License Installation, page 5-3](#)
- [Recording System Data, page 5-3](#)
- [Migration Overview, page 5-4](#)
  - [Migration from Release 9.5 or 9.6 to Release 9.8 without Platform Changes, page 5-5](#)
  - [Migration from Release 9.7 to Release 9.8 without Platform Changes, page 5-20](#)
  - [Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms, page 5-21](#)
- [Falling Back Overview, page 5-26](#)
  - [Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes, page 5-32](#)
  - [Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6, page 5-27](#)
  - [Replacing Hard Disks on an Existing Solaris 10 Platform, page 5-33](#)

## Conditions for Migration

Your hardware and software environment must meet the following conditions before you can use the procedures provided below to migrate your software to Solaris 10:

- Your system must have at least two disks.



### Note

If you plan to replace the Cisco PGW 2200 Softswitch hard disks during the upgrade, ensure that you have two replacement disks.

- The disks in the system must be at least 18 GB in size.
- You (or the person doing the upgrade) must be an experienced Solaris system administrator. You must be familiar with system administration tasks such as mounting file systems and running **tar** to save and restore files.

Use [Table 5-1](#) to determine the appropriate steps to upgrade your system.

**Table 5-1** *Solaris 10 and Cisco PGW 2200 Softswitch Release 9.8 Migration Conditions*

| Condition                                                                                       | Action                                                                                                                                              |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| If you are upgrading the disk drive but not upgrading the software...                           | Follow the procedure in the “ <a href="#">Replacing Hard Disks on an Existing Solaris 10 Platform</a> ” section on <a href="#">page 5-33</a> .      |
| If you are migrating from Solaris 8 to Solaris 10...                                            | You must install the Sun Solaris 10 Operating System and Cisco PGW 2200 Softswitch software Release 9.8 on your Cisco PGW 2200 Softswitch platform. |
| If you are migrating from the old Cisco PGW 2200 Softswitch software releases to Release 9.8(1) | See <a href="#">Table 5-2</a> to determine the migration procedure.                                                                                 |

## Cautions and Notes

Before starting the upgrade, consider the following cautions and notes:



### Caution

Before starting the upgrade, make sure the Cisco PGW 2200 Softswitch software is shut down, and the system administrator is logged in as **root**.



### Caution

Always start the migration or upgrade from the standby Cisco PGW 2200 Softswitch host.



### Caution

Resolve any major alarms on the Cisco PGW 2200 Softswitch before proceeding with the upgrade or migration.



### Caution

Do not make any provisioning changes to the Cisco PGW 2200 Softswitch during the upgrade to the Cisco PGW 2200 Softswitch software Release 9.8.



### Caution

When upgrading a redundant system, verify that the `pom.dataSync` parameter (located in `/opt/CiscoMGC/etc/XECfgParm.dat`) is set to **false** on both Cisco PGW 2200 Softswitch hosts in order to maintain calls and preserve your configuration.

**Note**

The Cisco PGW 2200 Softswitch supports a live upgrade from the Sparc-based platforms to the Opteron-based platforms. There is no service outage during the upgrade. For detailed procedure of this live upgrade, see the [“Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms” section on page 5-21](#).

## Required Software

You must have the following software:

- Cisco Solaris 10 Operating System Jumpstart Disk. There are two versions of this disk, one for each of the supported platform types. If your host platform is a Sun Opteron-based platform, use the Cisco Solaris 10 Operating System Jumpstart Disk for Opteron-based Platforms. Otherwise, use the Cisco Solaris 10 Operating System Jumpstart Disk for Sparc-based Platforms.
- Cisco Solaris 10 Operating Environment CD. The latest version of the version is available at:
  - <http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-sol10-sparc> (Sparc platform)
  - <http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-sol10-opteron> (Opteron platform)
- Cisco Installation CD, which includes the new release of the Cisco PGW 2200 Softswitch software. The latest version is available at:
  - <http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-973-sparc> (Sparc platform)
  - <http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-973-opteron> (Opteron platform)

## License Installation

Before you begin installation, obtain and install a Cisco PGW 2200 Softswitch license file using the instructions provided in [“Installing the License File, page 3-15”](#).

## Recording System Data

When you upgrade to Sun Solaris 10, you must reenter various elements of your system data, because the installation overwrites your existing system data. To ensure that you have all of your system data, record the contents of the following files:

- /etc/default
- /etc/defaultrouter
- Hostname files for each interface (such as /etc/hostname.hme0 or /etc/hostname.bge0)
- /etc/hosts.equiv
- /etc/group
- /etc/nsswitch.conf
- /etc/passwd
- /etc/resolv.conf
- /etc/shadow

- /etc/inet/hosts
- /etc/inet/netmasks
- /etc/inet/ntp.conf

**Note**

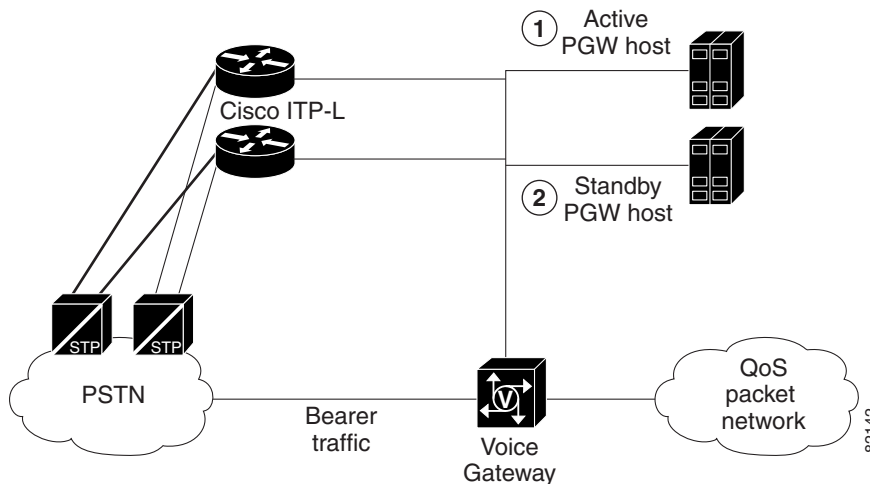
You may have already recorded some of this information based on the [“Required Site-Specific Information”](#) section on page 1-3 and the [“Required Machine-Specific Information”](#) section on page 1-3.

## Migration Overview

In order to migrate to Release 9.8 of the Cisco PGW 2200 Softswitch software, you need to install the software on both the active and standby Cisco PGW 2200 Softswitch hosts.

During the migration procedure, you must set each host to both active and standby. For clarity, the Cisco PGW 2200 Softswitches are labeled PGW 1 and PGW 2. PGW host 1 is the host that is active at the beginning of the procedure, and PGW host 2 is the host that is set to standby at the beginning of the procedure.

**Figure 5-1 Cisco PGW 2200 Softswitch Host Labeling**



Cisco PGW 2200 Softswitch supports both Sparc-based and Opteron-based platforms on Release 9.7(3). Prior to Release 9.7(3), only Sparc-based platforms are supported. In order to migrate to Release 9.8(1), you need find out the old Cisco PGW 2200 Softswitch software version, the old Sun platform, and the target Sun platform you are going to use.

See the *Cisco PGW 2200 Softswitch Hardware Installation Guide (Release 7 & 9)* to find out supported Sun platforms for Cisco PGW 2200 Softswitch software Release 9.8.

[Table 5-2](#) shows migration procedures to Cisco PGW 2200 Softswitch Release 9.8 across different platforms. The target platforms are listed in the first column. You can find the migration procedure based on your target platform and your existing Cisco PGW 2200 Softswitch platform.

Table 5-2 Migration Procedures to Release 9.8 Across Different Platforms

| Target Release 9.8 | From Release 9.5 or 9.6                                                             | From Release 9.7                                                                  |                                                                               |
|--------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
|                    | Sparc-based                                                                         | Sparc-based                                                                       | Opteron-based                                                                 |
| Sparc-based        | Migration from Release 9.5 or 9.6 to Release 9.8 without Platform Changes, page 5-5 | Migration from Release 9.7 to Release 9.8 without Platform Changes, page 5-20     | —                                                                             |
| Opteron-based      | Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms, page 5-21   | Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms, page 5-21 | Migration from Release 9.7 to Release 9.8 without Platform Changes, page 5-20 |

## Migration from Release 9.5 or 9.6 to Release 9.8 without Platform Changes

### Migrating the Second Cisco PGW 2200 Softswitch Software to Release 9.8

Use the steps in the following sections to upgrade PGW 2 to Cisco PGW 2200 Softswitch Release 9.8.



#### Note

If you want to use two new disk drives to install the Cisco PGW 2200 Softswitch software, complete the “[Installing Sun Solaris 10](#)” and “[Loading the Sun Solaris 10 Operating Environment Packages](#)” sections before you begin this procedure.

### Backing Up the Cisco PGW 2200 Softswitch Configuration Files

Before you begin the migration to the new version of the Cisco PGW 2200 Softswitch software, you need to back up your current system files. This section describes the following backup procedures:

- Create a remote backup of the current Cisco PGW 2200 Softswitch configuration using the mgcbakup utility. These backup files are used to revert to the original version of the Cisco PGW 2200 Softswitch software if a problem occurs during migration.
- Create an MGC.tar archive file of the current Cisco PGW 2200 Softswitch settings.

Follow these steps to back up the Cisco PGW 2200 Softswitch configuration files on PGW host 2:

- Step 1** Verify that the pom.dataSync variable is set to **False** on the active and standby Cisco PGW 2200 Softswitch hosts. To view or modify the pom.datasync variable, use an editor such as vi to edit /opt/CiscoMGC/etc/XECfgParm.dat.



#### Note

If you modify the pom.dataSync variable, restart the active and standby Cisco PGW 2200 Softswitch hosts sequentially to ensure that the changes take effect.

- Step 2** Log in to the PGW host 2 as **mgcusr**.
- Step 3** Enter the following command to stop the Cisco PGW 2200 Softswitch.

```
% sudo /etc/init.d/CiscoMGC stop
```

**Step 4** Follow these steps to back up the system:

- a. **Local Tape Backup**—Using the mgcbbackup utility, back up the system to the local tape drive.

```
% /opt/CiscoMGC/local/mgcbbackup -d /dev/rmt/0
```

- b. **Remote File Server Backup**—Type the following commands to use the mgcbbackup utility to back up the system to local directory.

```
% mkdir /var/tmp/upgrade
```

```
% cd /var/tmp/upgrade
```

```
% /opt/CiscoMGC/local/mgcbbackup -d /var/tmp/upgrade
```



**Note** The backup file is stored in the specified directory path in the following format:  
mgc\_<hostname>\_<yyyymmdd>\_<hhmmss>\_backup

Where:

- *hostname* is the name of the Cisco PGW 2200 Softswitch host, such as MGC-01.
- *yyyymmdd* is the date the backup file is created, in a year-month-day format, such as 20011130.
- *hhmmss* is the time the backup file is created, in an hour-minute-second format, such as 115923.

- c. Type the following command to list the files in your backup directory. Verify that the backup was successful.

```
% /opt/CiscoMGC/local/mgcbbackup -l
```



**Caution** You must now move the backup file to a remote file server using the ftp program so it can be recovered if you need to revert to the previous version of Solaris or Cisco PGW 2200 Softswitch software. You are responsible for providing the mechanism and storage location.

**Step 5** Stop MMDB database replication on PGW hosts 1 and 2:

```
% ./delete_replication.sh
```

**Step 6** Follow these steps to back up the MMDB on the PGW host 2:

- a. Log in to the PGW host 2 as **mgcusr**.

- b. Create the export.ttdb file:

```
% /opt/CiscoMGC/local/backupDb.sh /opt/CiscoMGC/etc/export.ttdb
```

- c. Create the migrate.ttdb file:

```
% ttMigrate -c DSN=howdydb /opt/CiscoMGC/etc/migrate.ttdb
```

- d. Remove the existing version of the MMDB file:

```
% rm -f /opt/CiscoMGC/etc/version.ttdb
```

- e. Determine the version of the version.ttdb file:



```
% /opt/TimesTen/32/bin/ttVersion presenter
```

The Cisco PGW 2200 Softswitch displays output similar to the following example:

```
[output = "TimesTen Release x.y.z build time ...]
```

- f. Replace the TimesTen database Release x.y.z with the new version:

```
% echo xyz >/opt/CiscoMGC/etc/version.ttdb
```

- g. Ensure that the version.ttdb, migrate.ttdb, and export.ttdb files are present:

```
% cd /opt/CiscoMGC/etc
% ls *.ttdb
```

**Step 7** Log in to the PGW host 2 as **root**.

**Step 8** Save the Cisco PGW 2200 Softswitch configuration data:

```
cp /opt/CiscoMGC/snmp/snmpd.cnf /opt/CiscoMGC/dialPlan
```



**Note**

If you are using Cisco MNM, save the snmpd.cnf file (located in /opt/CiscoMGC/snmp) before the migration starts.

**Step 9** Move to the CiscoMGC directory:

```
cd /opt/CiscoMGC
```

**Step 10** Back up the current Cisco PGW 2200 Softswitch files:

```
tar cvf /var/tmp/upgrade/MGC.tar ./etc ./dialPlan
cp ./local/ttbackup.tar /var/tmp/upgrade/ttbackup.tar
```

**Step 11** Verify that configuration files were successfully backed up. The mgc\_<hostname>\_<yyyymmdd>\_<hhmmss>\_backup file, ttbackup.tar, and MGC.tar files must be present.

```
cd /var/tmp/upgrade
ls
```

**Step 12** At this point, you have saved all the required data in tar files in /var/tmp/upgrade. Follow these steps to move these files to a blank tape or remote machine so that you can recover them after installing Solaris 10.



**Caution**

You are responsible for providing the backup mechanism and storage location.

- a. **Local tape drive**—Enter the following commands to store the files on a local tape drive:

```
cd /var/tmp/upgrade
tar cvf /dev/rmt/0 MGC.tar ttbackup.tar mgc_MGC-01_20011130_115923_backup.tar
```

- b. **Remote file server**—Using the ftp utility, transfer the MGC.tar and ttbackup.tar files from the /var/tmp/upgrade directory to a remote file server.



**Note**

Use the binary mode of ftp to transfer the MGC.tar and ttbackup.tar files.

**Step 13** Verify that the files are successfully transferred to the remote file server before continuing.

At this point, the Cisco PGW 2200 Softswitch configuration data has been saved in MGC.tar files on a tape or remote file server. The file backup is now complete. Proceed to “[Installing Sun Solaris 10](#)”.

## Installing Sun Solaris 10

Follow these steps to install Sun Solaris 10 on PGW host 2.



### Note

If you want to use two new disk drives to install the Cisco PGW 2200 Softswitch software Release 9.8, you can use the original disk drives to revert to the previous Cisco PGW 2200 Softswitch software version if there is a problem during the upgrade procedure. For instructions on how to revert to the previous Cisco PGW 2200 Softswitch software version, see the “[Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6](#)” section on page 5-27.



### Note

If you are upgrading from the primary disk, use Veritas Volume Manager to use the second disk for Solaris 8 fallback. For further information, refer to [http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage\\_Software/VERITAS\\_Volume\\_Manager/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software/VERITAS_Volume_Manager/index.html).

### Step 1

Shut down PGW host 2:

```
init 0
```

### Step 2

Wait for the system to return to the boot prompt and load the Cisco Solaris 10 Operating System Startup CD in the CD-ROM drive.



### Note

If you are replacing the disk drives, power off the system and label, and remove the existing disks, using proper anti-static procedures. Install the new disk drives in the same slots the original disk drives were located. Finally, power up the system. For more information, see the Sun System Manual for your platform.

### Step 3

Install the Sun Solaris 10 operating system using the procedures in the “[Loading the Sun Solaris 10 Operating System](#)” section on page 2-2.



### Caution

Do not format or modify the second disk drive. Unless you replaced the disk drives in [Step 2](#), the second disk contains the original Solaris 8 system if you are using Veritas Volume Manager. The second disk is used as a fallback in case of a failure in the Solaris 10 upgrade.

## Loading the Sun Solaris 10 Operating Environment Packages

Before you install the Cisco PGW 2200 Softswitch software, load the Sun Solaris 10 Operating Environment packages using the steps in the “[Loading the Sun Solaris 10 Operating Environment](#)” section.

**Caution**

Do not load Solstice DiskSuite (CSCOh023) if you are using Veritas Volume Manager to use the second disk for Solaris 8 fallback. For more information about Veritas Volume Manager, refer to [http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage\\_Software/VERITAS\\_Volume\\_Manager/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software/VERITAS_Volume_Manager/index.html).

## Restoring Data Files

Follow these instructions to restore the Cisco PGW 2200 Softswitch configuration files (MGC.tar) on PGW host 2:

**Step 1** Log in as **root** and move the Cisco PGW 2200 Softswitch configuration files to the /tmp directory.

```
cd /var/tmp
```

**Step 2** Create a mount point.

```
mkdir saved
cd /var/tmp/saved
```

**Step 3** Store the data files:

**a. Local tape drive**—Store the files on a local tape drive.

```
tar xvf /dev/rmt/0
```

**b. Remote file server**—Using the ftp utility, transfer the MGC.tar and ttbackup.tar files from the remote file server to the /tmp/saved directory.

**Note**

Use the binary mode of ftp to transfer the MGC.tar and ttbackup.tar files.

**Step 4** Verify that the files successfully transfer to the remote file server before continuing.

**Step 5** Create an MGC directory and extract Cisco PGW 2200 Softswitch data files:

```
cd /opt
mkdir CiscoMGC # Create MGC directory
cd /opt/CiscoMGC
mkdir snmp # Create snmp directory
cp /var/tmp/saved/MGC.tar MGC.tar
tar xvf MGC.tar # Extract MGC data files
mkdir local # Create snmp directory
cp /var/tmp/saved/ttbackup.tar ./local/ttbackup.tar
```

**Step 6** Verify that the etc and dialPlan directories are present.

**Step 7** If you saved the snmpd.cnf file, copy the file to the /opt/CiscoMGC/snmp directory:

```
cp /opt/CiscoMGC/dialPlan/snmpd.cnf /opt/CiscoMGC/snmp
```

**Step 8** Enter the following command to reboot the Cisco PGW 2200 Softswitch:

```
init 6
```

## Installing and Verifying the Cisco PGW 2200 Softswitch Software

Follow these steps to install the Cisco PGW 2200 Softswitch software on PGW host 2:

- Step 1** Install the Cisco PGW 2200 Softswitch software using the instructions in the [“Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases”](#) section on page 3-3.
- Step 2** When the installation is complete, perform the following steps on PGW host 2:
- Step 3** Log into PGW host 2 as **mgcusr**.
- Step 4** Enter the following command to start the Cisco PGW 2200 Softswitch software on PGW host 2:
- ```
% sudo /etc/init.d/CiscoMGC start
```
- Step 5** If you are migrating from the Sparc platform to the Opteron platform, start a provisioning session and regenerate the .bin files:
- ```
mm1> prov-sta
mm1> prov-cpy
```

**Caution**

Complete this step only if you are migrating from the Sparc platform to the Opteron platform.

- Step 6** Verify that the migration to the Cisco PGW 2200 Softswitch software Release 9.8 is complete and that all protocols are operational:
- ```
mm1> rtrv-ne
mm1> rtrv-tc:all
mm1> rtrv-dest:all
mm1> rtrv-c7lnk:all
mm1> rtrv-iplnk:all
```
- Step 7** Enter the following command on the standby host to verify that call replication is occurring between PGW hosts 1 and 2:
- ```
mm1> rtrv-tc:all
-----rtrv-tt-database-----
numan-rtrv:cliprefix:clisetname="1111",cliprefix="1"
numan-rtrv:announcement:annId=1,gwtype="AS5400"
numan-rtrv:porttbl:digitstring="100034"
```

- Step 8** You have now upgraded the PGW host 2 to the Release 9.8 software. Promote PGW host 2 to active:

**Note**

This step sets PGW host 1 to standby.

```
mm1> sw-over::confirm
```

- Step 9** When the switchover is complete, verify that PGW host 2 is processing calls.

```
mm1> rtrv-tc:all
```

**Note**

If the call replication fails, or if new active host is not processing calls, see the [Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide](#).

## Migrating the First Cisco PGW 2200 Softswitch Software to Release 9.8

Use the steps in the following sections to upgrade PGW 1 to Cisco PGW 2200 Softswitch Release 9.8.

**Note**

If you want to use two new disks drives to install the Cisco PGW 2200 Softswitch software Release 9.8, complete the “[Installing Sun Solaris 10](#)” and “[Loading the Sun Solaris 10 Operating Environment Packages](#)” sections before you begin this procedure.

## Backing Up the Cisco PGW 2200 Softswitch Configuration Files

Before you begin the migration to the new version of the Cisco PGW 2200 Softswitch software, you need to back up your current system files. This section describes the following backup procedures:

- Create a remote backup of the current Cisco PGW 2200 Softswitch configuration using the mgcbbackup utility. You can use these backup files to revert to the original version of the Cisco PGW 2200 Softswitch software if there is a problem during migration.
- Create an MGC.tar archive of the current Cisco PGW 2200 Softswitch settings.

Follow these steps to back up the configuration files on PGW host 1:

- Step 1** Verify that the pom.dataSync variable is set to **False** on both Cisco PGW 2200 Softswitch hosts. To edit the pom.datasync variable, use an editor such as vi to edit /opt/CiscoMGC/etc/XECfgParm.dat.

**Note**

If you modify the pom.dataSync variable, restart the active and standby Cisco PGW 2200 Softswitch hosts sequentially to ensure that the changes take effect.

- Step 2** Log in to the PGW host 1 as **mgcusr**.

- Step 3** Enter the following command to stop the Cisco PGW 2200 Softswitch.

```
% sudo /etc/init.d/CiscoMGC stop
```

- Step 4** Follow these steps to back up the system:

- Local Tape Backup**—Using the mgcbbackup utility, back up the system to the local tape drive.
- Remote File Server Backup**—Enter following commands to use the mgcbbackup utility to back up the system to local directory.

```
% mkdir /var/tmp/upgrade
% cd /var/tmp/upgrade
% /opt/CiscoMGC/local/mgcbbackup -d /var/tmp/upgrade
```

**Note**

The backup file is stored in the specified directory path in the following format:  
mgc\_<hostname>\_<yyyymmdd>\_<hhmmss>\_backup

Where:

- *hostname* is the name of the Cisco PGW 2200 Softswitch host, such as MGC-01.
- *yyyymmdd* is the date the backup file is created, in a year-month-day format, such as 20011130.
- *hhmmss* is the time the backup file is created, in an hour-minute-second format, such as 115923.

- Verify that the backup was successful by listing the files in your backup directory:

```
% /opt/CiscoMGC/local/mgcbakup -l
```

**Caution**

You must now move the backup file to a remote file server using the ftp program so it can be recovered if you need to revert the Cisco PGW 2200 Softswitch to the previous version of Solaris or Cisco PGW 2200 Softswitch software. You are responsible for providing the mechanism and storage location.

**Step 5** Stop TimesTen database replication on PGW hosts 1 and 2:

```
% ./delete_replication.sh
```

**Step 6** Follow these steps to back up the MMDB on the PGW host 1:

a. Log in to the PGW host 1 as **mgcusr**.

b. Create the export.ttdb file:

```
% /opt/CiscoMGC/local/backupDb.sh /opt/CiscoMGC/etc/export.ttdb
```

c. Create the migrate.ttdb file:

```
% ttMigrate -c DSN=howdydb /opt/CiscoMGC/etc/migrate.ttdb
```

d. Remove the existing version of the MMDB file:

```
% rm -f /opt/CiscoMGC/etc/version.ttdb
```

e. Determine the version of the version.ttdb file:

```
% /opt/TimesTen/32/bin/ttVersion presenter
```

The Cisco PGW 2200 Softswitch displays output similar to the following example:

```
[output = "TimesTen Release x.y.z build time ...]
```

f. Replace the TimesTen database Release x.y.z with the new version:

```
% echo xyz >/opt/CiscoMGC/etc/version.ttdb
```

g. Ensure that the version.ttdb, migrate.ttdb, and export.ttdb files are present:

```
% cd /opt/CiscoMGC/etc
% ls *.ttdb
```

**Step 7** Log in to PGW 1 as **root**.

**Step 8** Save the Cisco PGW 2200 Softswitch configuration data:

```
cp /opt/CiscoMGC/snmp/snmpd.cnf /opt/CiscoMGC/dialPlan
```

**Note**

If you are using Cisco MNM, save the snmpd.cnf file (located in /opt/CiscoMGC/snmp) before the migration starts.

**Step 9** Move to the CiscoMGC directory:

```
cd /opt/CiscoMGC
```

**Step 10** Back up the current Cisco PGW 2200 Softswitch configuration files:

```
tar cvf /var/tmp/upgrade/MGC.tar ./etc ./dialPlan
cp ./local/ttbackup.tar /var/tmp/upgrade/ttbackup.tar
```

- Step 11** Verify that configuration files were successfully backed up. The `mgc_<hostname>_<yyyymmdd>_<hhmmss>_backup` file and the `MGC.tar` file must be present.

```
cd /var/tmp/upgrade
ls
```

- Step 12** At this point, you have saved all the required data in tar files in `/var/tmp/upgrade`. Follow these steps to move these files to a blank tape or remote machine so that you can recover them after installing Solaris 10.

**Caution**

You are responsible for providing the backup mechanism and storage location.

- a. Local tape drive**—Enter the following commands to store the files on a local tape drive:

```
cd /var/tmp/upgrade
tar cvf /dev/rmt/0 MGC.tar ttbackup.tar mgc_MGC-01_20011130_115923_backup.tar
```

- b. Remote file server**—Using the `ftp` utility, transfer the `MGC.tar` and `ttbackup.tar` files from the `/var/tmp/upgrade` directory to a remote file server.

**Note**

Use the binary mode of `ftp` to transfer the `MGC.tar` and `ttbackup.tar` files.

- Step 13** Verify that the files are successfully transferred to the remote file server before continuing.

At this point, the Cisco PGW 2200 Softswitch configuration data have been saved in `MGC.tar` files on a tape or remote file server. The file backup is now complete. Proceed to [Installing Sun Solaris 10](#).

## Installing Sun Solaris 10

Follow these steps to install Sun Solaris 10 on PGW host 1:

**Note**

If you want to use two new hard disks to install the Cisco PGW 2200 Softswitch software Release 9.8, you can use the original hard disks to revert to the previous Cisco PGW 2200 Softswitch software version if there is a problem during the upgrade procedure. For instructions on how to revert to the previous Cisco PGW 2200 Softswitch software version, refer to [Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6](#).

**Note**

If you are upgrading from the primary disk, you need use Veritas Volume Manager to use the second disk for Solaris 8 fallback. For further information, refer to [http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage\\_Software/VERITAS\\_Volume\\_Manager/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software/VERITAS_Volume_Manager/index.html).

- Step 1** Shut down PGW host 1:

```
init 0
```

- Step 2** Wait for the system to return to the boot prompt then load the Cisco Solaris 10 Operating System Startup CD in the CD-ROM drive.



**Note** If you are replacing the hard disks, power off the system, label, and remove the existing disks using proper anti-static procedures. Install the new disk drives in the same slots the original disk drives were located. Finally, power up the system. See the Sun System Manual for your platform.

- Step 3** Install the Sun Solaris 10 operating system using the procedures in “[Loading the Sun Solaris 10 Operating System](#)” section on page 2-2.



**Caution** Do not format or modify the second disk drive. Unless the disk drives were replaced in [Step 2](#), the second disk contains the original Solaris 8 system if you are Veritas Volume Manager. The second disk is used as a fallback in case of a failure in the Solaris 10 upgrade.

## Loading the Sun Solaris 10 Operating Environment Packages

Before you install the Cisco PGW 2200 Softswitch software, load the Sun Solaris 10 Operating Environment packages using the steps in the “[Loading the Sun Solaris 10 Operating Environment](#)” section on page 2-72.



**Caution** Do not load Solstice DiskSuite (CSCOh023) if you are using Veritas Volume Manager to use the second disk for Solaris 8 fallback. For more information about Veritas Volume Manager, refer to [http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage\\_Software/VERITAS\\_Volume\\_Manager/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software/VERITAS_Volume_Manager/index.html).

## Restoring Data Files

Follow these instructions to restore the Cisco PGW 2200 Softswitch configuration files (MGC.tar) on PGW host 1:

- Step 1** Log in as **root** and move the Cisco PGW 2200 Softswitch configuration files to the /tmp directory.
- ```
# cd /var/tmp
```
- Step 2** Create a mount point.
- ```
mkdir saved
cd /var/tmp/saved
```
- Step 3** Store the data files:
- Local tape drive:** Store the files on a local tape drive.
- ```
# tar xvf /dev/rmt/0
```
- Remote file server**—Using the ftp utility, transfer the MGC.tar and ttbackup.tar files from the remote file server to the /tmp/saved directory.



Note Use the binary mode of ftp to transfer the MGC.tar and ttbackup.tar files.

Step 4 Verify that the files successfully transfer to the remote file server before continuing.

Step 5 Create an CiscoMGC directory and extract Cisco PGW 2200 Softswitch data files:

```
# cd /opt
# mkdir CiscoMGC                # Create MGC directory
# cd /opt/CiscoMGC
# mkdir snmp                    # Create snmp directory
# cp /var/tmp/saved/MGC.tar MGC.tar
# tar xvf MGC.tar               # Extract MGC data files
# mkdir local                   # Create snmp directory
# cp /var/tmp/saved/ttbackup.tar ./local/ttbackup.tar
```

Step 6 Verify that the etc and dialPlan directories are present.

Step 7 If you saved the snmpd.cnf file, copy the file to the /opt/CiscoMGC/snmp directory:

```
# cp /opt/CiscoMGC/dialPlan/snmpd.cnf /opt/CiscoMGC/snmp
```

Step 8 Enter the following command to reboot the Cisco PGW 2200 Softswitch:

```
# init 6
```

Installing and Verifying the Cisco PGW 2200 Softswitch Software

Follow these steps to install the Cisco PGW 2200 Softswitch software on PGW host 1:

Step 1 Install the Cisco PGW 2200 Softswitch software using the instructions in [Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases](#).

Step 2 Set the value of pom.dataSync to **true** on PGW hosts 1 and 2. To update the pom.dataSync value, use an editor such as vi to edit the XECfgParm.dat in the /opt/CiscoMGC/etc/ directory.

Step 3 Log in to PGW host 1 as **mgcusr**.

Step 4 Enter the following command to start the Cisco PGW 2200 Softswitch software on PGW host 1:

```
% sudo /etc/init.d/CiscoMGC start
```

Step 5 Wait for PGW host 1 to come up fully as standby host.

Step 6 When the Cisco PGW 2200 Softswitch software starts, it updates the following files to function with the Cisco PGW 2200 Softswitch software Release 9.8:

- Data files in the /opt/CiscoMGC/etc directory
- Data files in the /opt/CiscoMGC/etc/CONFIG_LIB/CFG_config-name directory specified by the /opt/CiscoMGC/etc/active_link file

Step 7 Enter the following command on PGW host 1 to restart TimesTen database replication:

```
% /opt/CiscoMGC/local/setup_replication.sh peerHost active
```

Step 8 Enter the following command on PGW host 2 to stop the Cisco PGW 2200 Softswitch software:

```
% init 0
```

Step 9 Enter the following command on PGW host 2:

```
% /opt/CiscoMGC/local/setup_replication.sh peerHost standby
```

Step 10 Verify that the migration to the Release 9.8 software is complete and that all protocols are operational:

```
mm1> rtrv-ne
mm1> rtrv-tc:all
mm1> rtrv-dest:all
```

```
mml> rtrv-c7lnk:all
mml> rtrv-iplnk:all
```

- Step 11** Enter the following command on the standby host to verify that call replication is occurring between PGW hosts 1 and 2:

```
mml> rtrv-tc:all
```

Text similar to the following is displayed:

```
-----rtrv-tt-database-----
# numan-rtrv:cliprefix:clisetname="1111",cliprefix="1"
# numan-rtrv:announcement:annId=1,gwtype="AS5400"
# numan-rtrv:porttbl:digitstring="100034"
```

- Step 12** You have now completed upgrading PGW host 1 to the Release 9.8 software. Enter the following command to promote PGW host 1 to active:

```
mml> sw-over::confirm
```

- Step 13** When the switchover is complete, enter the following command to verify that PGW host 1 is processing calls.

```
mml> rtrv-tc:all
```



Note

If the call replication fails, or if new Active Host is not processing calls, see the *Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide*.

- Step 14** Restart PGW host 2 in order to ensure that the changes to the pom.dataSync variable take effect.

Transferring Additional Configuration Files

If you need to transfer additional configuration files, follow these steps, using the config-lib tool:

- Step 1** Set the pom.dataSync variable to **False** on both Cisco PGW 2200 Softswitch hosts. To view or modify the pom.dataSync variable, use an editor such as vi to edit /opt/CiscoMGC/etc/XECfgParm.dat.
- Step 2** Restart the active and standby Cisco PGW 2200 Softswitch hosts sequentially to ensure that the changes to the pom.dataSync variable take effect.

- Step 3** Complete the following steps to migrate the files to PGW host 2:

- Log in to PGW host 2 as **root**.
- Enter the following command to stop the Cisco PGW 2200 Softswitch software on PGW host 2:


```
# /etc/init.d/CiscoMGC stop
```
- Run the config-lib application:


```
# config-lib
```
- At the configuration file library main menu, enter **3** and press **Enter**.

The Configuration File Library Main Menu

- List Configuration Versions in Library
- Save Production to a new Library Version
- Copy Library Version to Production

```
4. Remove Configuration Library Version
Enter Selection or 'q' to quit> 3
```

- e. The menu lists available configuration files.

```
Configuration Versions
```

```
1. sip-upgrade-0131-3
2. sip-upgrade-0131
3. sip-upgrade-0131-2
4. sip-upgrade-0130
***Current Production Version = sip-upgrade-0131-3
Enter Selection to Copy or 'q' to go back>
```

- f. Enter the number of the configuration you want to migrate and press **Enter**.

In this example, enter 2 to migrate the sip-upgrade-0131 configuration.

Text similar to the following is displayed:

```
Enter Selection to Copy or 'q' to go back> 2
***Start checking if migration is needed...
starting migration ...
```



Note

Command output is truncated. Config-lib lists the related files as they are migrated to Release 9.8.

```
***finish checking migration...
```

```
This operation will copy the selected version of each configuration file
from the LIBRARY to the PRODUCTION area.
Do you want to overwrite the production files (y/n)?
```

- g. At the prompt, enter **y** and press **Enter** to copy the files to the production area.

```
Do you want to overwrite the production files (y/n)? y
removing data files in Production Area....
Copying data files of selected version to the data Production Area....
```

```
Completed copy
```

- h. Enter **q** to exit config-lib.

```
The Configuration File Library Main Menu
```

```
1. List Configuration Versions in Library
2. Save Production to a new Library Version
3. Copy Library Version to Production
4. Remove Configuration Library Version
Enter Selection or 'q' to quit> q
Quit
```

Step 4 Perform the following steps on PGW host 2 when the file transfer is complete:

- a. Enter the following command to start the Cisco PGW 2200 Softswitch software:

```
# /etc/init.d/CiscoMGC start
```

- b. Verify that all protocols are operational:

```
mm1> rtrv-ne
mm1> rtrv-tc:all
mm1> rtrv-dest:all
mm1> rtrv-c7lnk:all
```

```
mml> rtrv-iplnk:all
```

- c. Enter the following command on the standby host to verify that call replication is occurring between the active and standby Cisco PGW 2200 Softswitch hosts:

```
mml> rtrv-tc:all
```

Step 5 Promote PGW host 2 to active:

```
mml> sw-over::confirm
```

Step 6 When the switchover is complete, verify that PGW host 2 is processing calls:

```
mml> rtrv-tc:all
```



Note

If the call replication fails, or if the new Active Host is not processing calls, see the *Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide*.

Step 7 Complete the following steps to migrate the files to PGW host 1:

- a. Log in to PGW host 1 as **root**.
- b. Enter the following command to stop the Cisco PGW 2200 Softswitch software on PGW host 1:

```
# /etc/init.d/CiscoMGC stop
```

- c. Enter the following command on PGW host 1:

```
# config-lib
```

- d. At the configuration file library main menu, type **3**.

```
The Configuration File Library Main Menu
```

```
1. List Configuration Versions in Library
2. Save Production to a new Library Version
3. Copy Library Version to Production
4. Remove Configuration Library Version
Enter Selection or 'q' to quit> 3
```

- e. The menu lists available configuration files.

```
Configuration Versions
```

```
1. sip-upgrade-0131-3
2. sip-upgrade-0131
3. sip-upgrade-0131-2
4. sip-upgrade-0130
***Current Production Version = sip-upgrade-0131-3
Enter Selection to Copy or 'q' to go back>
```

- f. Enter the number of the configuration you want to migrate.

```
Enter Selection to Copy or 'q' to go back> 2
***Start checking if migration is needed...
starting migration ...
```



Note

Command output is truncated. Config-lib lists the related files as they are migrated to Release 9.8.

```
migration completed successfully
***finish checking migration...
```

```
This operation will copy the selected version of each configuration file
from the LIBRARY to the PRODUCTION area.
Do you want to overwrite the production files (y/n)?
```

- g. Enter **y** and press **Enter** to copy the files to the production area.

```
Do you want to overwrite the production files (y/n)? y
removing data files in Production Area....
Copying data files of selected version to the data Production Area....

Completed copy
```

- h. Enter **q** to exit config-lib.

```
The Configuration File Library Main Menu

1. List Configuration Versions in Library
2. Save Production to a new Library Version
3. Copy Library Version to Production
4. Remove Configuration Library Version
Enter Selection or 'q' to quit> q
Quit
```

Step 8 Perform the following steps when the file transfer is complete:

- a. Set the value of `pom.dataSync` to **true** on PGW hosts 1 and 2. To update the `pom.dataSync` value, use an editor such as `vi` to edit the `XECfgParm.dat` in the `/opt/CiscoMGC/etc/` directory.
- b. Log in to PGW host 1 as **root**.
- a. Enter the following command to start the Cisco PGW 2200 Softswitch software on PGW host 1:


```
# /etc/init.d/CiscoMGC start
```
- b. Wait for PGW host 1 to come up fully as standby host.
- c. Stop the Cisco PGW 2200 Softswitch software on PGW host 2:


```
# init 0
```
- d. Set PGW host 2 to standby:


```
# /opt/CiscoMGC/local/setup_replication.sh peerHost standby
```

Step 9 Verify that all protocols are operational:

```
mm1> rtrv-ne
mm1> rtrv-tc:all
mm1> rtrv-dest:all
mm1> rtrv-c7lnk:all
mm1> rtrv-iplnk:all
```

Step 10 Enter the following command on the standby host to verify that call replication is occurring between PGW hosts 1 and 2:

```
mm1> rtrv-tc:all
```

Step 11 Promote PGW host 1 to active:

```
mm1> sw-over::confirm
```

Step 12 When the switchover is complete, verify that PGW host 1 is processing calls.

```
mm1> rtrv-tc:all
```

**Note**

If the call replication fails, or if new Active Host is not processing calls, refer to the *Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide*.

- Step 13** Restart PGW host 2 in order to ensure that the changes to the pom.dataSync variable take effect.

Migration from Release 9.7 to Release 9.8 without Platform Changes

Perform the following procedure to migrate from Cisco PGW 2200 Softswitch Release 9.7 to Release 9.8 without platform changes:

- Step 1** Log in the Cisco PGW 2200 Softswitch as **mgcusr**.
- Step 2** Enter the following command to stop the Cisco PGW 2200 Softswitch software:
- ```
% sudo /etc/init.d/CiscoMGC stop
```
- Step 3** Delete the replication between the active and standby pair of the Cisco PGW 2200 Softswitches.
- ```
% ./delete_replication.sh
```
- Step 4** Back up the .odbc.ini file manually using the following command:
- ```
% cp /opt/CiscoMGC/local/.odbc.ini /opt/CiscoMGC/etc/.odbc.ini.ttdb
```
- Step 5** Locate the active configuration using the following commands:
- ```
% cd /opt/CiscoMGC/etc
% cd active_link
% pwd
```
- The text similar to the following is displayed:
- ```
/opt/CiscoMGC/etc/CONFIG_LIB/CFG_Sip
```
- Step 6** Back up the active configuration using the following commands:
- ```
% cd /opt/CiscoMGC/etc/CONFIG_LIB
% tar cvf CFG_backup973.tar ./CFG_Sip
```
- Step 7** Back the snmp folder using the following command:
- ```
% cd /opt/CiscoMGC
% tar cvf SNMP_backup973.tar ./snmp
```
- Step 8** Back the dial plan configurations using the following commands:
- ```
% cd /opt/CiscoMGC
% tar cvf DP_backup973.tar ./dialPlan
```
- Step 9** Log in again as **root** and uninstall the Cisco PGW 2200 Softswitch software. See the [“Removing a Cisco PGW 2200 Softswitch Software Version: Sample Output for uninstall.sh”](#) section on page E-1.

**Note**

Answer **y** to the question, “Is the uninstall being done in order to upgrade to a new version of the software?”, at the beginning of the uninstallation procedure.

Step 10 Install the Cisco PGW 2200 Softswitch software Release 9.8 as described in the “[Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases](#)” section on page 3-3

Step 11 Start the Cisco PGW 2200 Softswitch software:

```
% sudo /etc/init.d/CiscoMGC start
```

Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms

The Cisco PGW 2200 Softswitch supports a live upgrade from Sparc-based platforms to Opteron-based platforms. There is no service outage during the upgrade. The service and data on the Sparc-based platforms are transferred seamlessly to the Opteron-based platforms.

Before You Start

Before you do the live upgrade from the old Sparc-based platforms to the new Opteron-based platforms, make sure you have full access to the following platforms:

- the old Sparc-based active Cisco PGW 2200 Softswitch (referred to as PGW 1)
- the old Sparc-based standby Cisco PGW 2200 Softswitch (referred to as PGW 2)
- A pair of new Opteron-based hardware platforms for Cisco PGW 2200 Softswitch (referred to as PGW 3 and PGW 4)

Verify if the two scripts, **liveUpgrade.sh** and **mgcTTmigrate** (Sparc-based platform scripts), are in the /opt/CiscoMGC/local directory on PGW 1 and 2. If you cannot find them, you can download them from the Cisco website.

To download the mgcTTmigrate script, go to

http://www.cisco.com/cgi-bin/Software/Tablebuild/doftp.pl?ftpfile=/cisco/voice/mgc/9.7.3/opteron/mgcTTmigrate_opteron.tar.

To download the liveUpgrade.sh script, see [Table 5-3](#).

Table 5-3 *Links to the liveUpgrade.sh Script for Different Software Releases*

| Software Releases | Links to the liveUpgrade.sh Script |
|-------------------|--|
| 9.5(2) | http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-952 |
| 9.6(1) | http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-961 |
| 9.7(3) | http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-973-sparc (Sparc) http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-973-opteron (Opteron) |

**Note**

No provisioning is allowed during the live upgrade. Before performing the live upgrade, you must stop all the MML provisioning sessions and quit from the MML interface on the old Sparc-based active and standby pair of Cisco PGW 2200 Softswitches. Provisioning is allowed only when the new pair of Cisco PGW 2200 Softswitches on Opteron-based platforms are running normally as an active and standby pair. To view the status of the Cisco PGW 2200 Softswitch, use the MML command “rtrv-ne”.

Live Upgrade Procedure

This section describes the live upgrade procedure from Sparc-based platforms to Opteron-based platforms.

First, you migrate PGW 2 to PGW 4. When the migration is complete, PGW 4 can serve as a replacement of PGW 2. You stop PGW 2 and do a switchover from PGW 1 to PGW 4. When the switchover is complete, you migrate PGW 1 to PGW 3. Finally you enable the MMDB database replication between PGW 3 and PGW 4.

Perform the following steps to do the live upgrade:

- Step 1** Verify that the `pom.dataSync` variable is set to **False** on both PGW 1 and PGW 2. To view or modify the `pom.dataSync` variable, use an editor such as `vi` to edit `/opt/CiscoMGC/etc/XECfgParm.dat`.

**Note**

You must set `pom.dataSync` to false on the active and standby pair of Cisco PGW 2200 Softswitches before you perform the live upgrade.

**Note**

If you modify the `pom.dataSync` variable, make sure you save the file, `/opt/CiscoMGC/etc/XECfgParm.dat`. You don't have to restart the Cisco PGW 2200 Softswitch after the modification of this variable.

- Step 2** On **PGW 2**, log in as **root**. Then run the following script under `/opt/CiscoMGC/local`.

```
# cd /opt/CiscoMGC/local
# ./liveUpgrade.sh export
```

Text similar to the following is displayed:

```
You are running as root - Good...
Stopping TimesTen database replication on sh-hox
Stopped TimesTen database replication successfully
Backing up the Main Memory Database (MMDB) on sh-hox
Back up the Main Memory Database (MMDB) successfully
All configuration files were exported successfully in /var/tmp/upgrade/
please ftp them to your file server
```

- Step 3** Back up the `odbc.ini` file using the following command:

```
# cp /opt/CiscoMGC/local/.odbc.ini /var/tmp/upgrade/
```

**Note**

Step 3 is only required when **PGW 2's** software version is Cisco PGW 2200 Softswitch Release 9.7.

- Step 4** Use ftp utility to transfer MGC.tar, ttbackup.tar, and .odbc.ini which are generated in Step 2 and Step 3 from /var/tmp/upgrade directory to the remote file server.



Note Use the binary mode of ftp to transfer the three files, MGC.tar, ttbackup.tar, and .odbc.ini.

- Step 5** Verify that the files are successfully transferred to the remote file server before continuing.
- Step 6** Install the Sun Solaris 10 operating system on **PGW 4** using the procedure in the [“Loading the Sun Solaris 10 Operating System” section on page 2-2.](#)
- Step 7** Install the Sun Solaris 10 operating environment packages on **PGW 4** using the steps in the [“Loading the Sun Solaris 10 Operating Environment” section on page 2-72.](#)
- Step 8** On **PGW 4**, log in as **root**.
- Step 9** Use the following commands to create the **saved** directory under /var/tmp.
- ```
cd /var/tmp
mkdir saved
cd /var/tmp/saved
```
- Step 10** Use the ftp utility to transfer the three files, MGC.tar, ttbackup.tar, and .odbc.ini from the remote file server to the current directory /var/tmp/saved on **PGW 4**.
- Step 11** Verify that the files are successfully transferred from the remote file server before continuing.
- Step 12** Download the liveUpgrade.sh and mgcTTmigrate scripts (Opteron-based platform scripts) from the Cisco website. Then put them under /var/tmp/saved. (See [“Before You Start” section on page 5-21.](#))
- Step 13** Use the following commands to change the file permissions of the two scripts, liveUpgrade.sh and mgcTTmigrate.
- ```
# chmod 777 liveUpgrade.sh
# chmod 777 mgcTTmigrate
```
- Step 14** On **PGW 4**, run the following script.
- ```
./liveUpgrade.sh import
```
- Text similar to the following is displayed:
- ```
You are running as root - Good...
make sure PGW configuration files has been fetched from your file server
and already placed in /var/tmp/saved directory

Would you like to continue? [y] [y,n,?,q]
```
- Step 15** Enter **y** and press **Enter** to continue.
- Text similar to the following is displayed:
- ```
remove bin files due to bin format incompatibility between Opteron and Sparc platform
removed /opt/CiscoMGC/dialPlan/*.bin
removed /opt/CiscoMGC/etc/*.bin
removed /opt/CiscoMGC/etc/active_link/*.bin
removed /opt/CiscoMGC/etc/*.ttldb
Finished import configuration files. Please go ahead to install PGW software
```
- Step 16** Install the Cisco PGW 2200 Softswitch software Release 9.7(3) on **PGW 4** using the steps in [Chapter 3, “Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher.”](#)
- Step 17** Restore the .odbc.ini file using the following command on **PGW 4**:
- ```
# cp /var/tmp/saved/.odbc.ini /opt/CiscoMGC/local/
```

- Step 18** Use the following commands to move to the /opt/CiscoMGC/local directory and start the TimesTen database.

```
# cd /opt/CiscoMGC/local
# /etc/init.d/tt start
```

Text similar to the following is displayed:

The tt60 daemon has started successfully.

- Step 19** Change the login to **mgcusr** using the following command:

```
# su - mgcusr
```

- Step 20** Run **db_count.sh** script to verify that the TimesTen database is empty.

```
% ./db_count.sh
```

Text similar to the following is displayed:

```
Counting the rows in each database table.
CISCO.ANNOUNCEMENT < 0 >
CISCO.A_CHARGE_ORIGIN < 0 >
CISCO.A_NUMBERDIALPLANSELECTION < 0 >
CISCO.BLACKLIST_A < 0 >
CISCO.BLACKLIST_B < 0 >
CISCO.CBBOOKINGINFO < 0 >
CISCO.CBMONITORINGINFO < 0 >
CISCO.CLIIIPADDRESS < 0 >
CISCO.CLIPREFIX < 0 >
CISCO.FULLNUMBERTRANSLATION < 0 >
CISCO.H323IDDIVFROM < 0 >
CISCO.LIENTRIES < 0 >
CISCO.NUMBERTERM < 0 >
CISCO.PORTEDNUMBERS < 0 >
CISCO.SCRIPT < 0 >
CISCO.WHITELIST_A < 0 >
CISCO.WHITELIST_B < 0 >
```

- Step 21** Import the database files from the ttbackup.tar using the following command:

```
% ./mgcTTmigrate import /var/tmp/saved/ttbackup.tar
```

- Step 22** Verify the MMDB database is successfully imported from the configuration backup file using the following script.

```
% ./db_count.sh
```

Text similar to the following is displayed:

```
Counting the rows in each database table.
CISCO.ANNOUNCEMENT < 1001 >
CISCO.A_CHARGE_ORIGIN < 1001 >
CISCO.A_NUMBERDIALPLANSELECTION < 6 >
CISCO.BLACKLIST_A < 1001 >
CISCO.BLACKLIST_B < 1002 >
CISCO.CBBOOKINGINFO < 0 >
CISCO.CBMONITORINGINFO < 0 >
CISCO.CLIIIPADDRESS < 1000 >
CISCO.CLIPREFIX < 9 >
CISCO.FULLNUMBERTRANSLATION < 0 >
CISCO.H323IDDIVFROM < 1002 >
CISCO.LIENTRIES < 0 >
CISCO.NUMBERTERM < 0 >
CISCO.PORTEDNUMBERS < 10005 >
CISCO.SCRIPT < 1000 >
```

```
CISCO.WHITELIST_A < 1001 >
CISCO.WHITELIST_B < 1001 >
```

Step 23 Log in **PGW 2** as **root** and stop **PGW 2** using the following command:

```
# /etc/init.d/CiscoMGC stop
```

Step 24 Remove **PGW 2** from the current network environment and replace it with **PGW 4**.

Step 25 Configure the required network parameters on **PGW 4** to make PGW 4 a replacement of PGW 2. For example, the IP address on PGW 4 should be the same with PGW 2.

Step 26 Log in **PGW 4** as **root** and start the Cisco PGW 2200 Softswitch software using the following command:

```
# /etc/init.d/CiscoMGC start
```



Note

Before you start the Cisco PGW 2200 Softswitch software, make sure that you have installed the license file in the /opt/CiscoMGC/license directory. See Step 1 and 2 in the [“Installing the License File if the Cisco PGW 2200 Softswitch is NOT Running”](#) section on page 3-16 for more information.

Step 27 Use the following commands to change the login to **mgcusr** on **PGW 4** and verify the migration from PGW 2 to PGW 4 is complete.

```
# su - mgcusr
% mm1
mm1> rtrv-ne
mm1> rtrv-softw:all
mm1> rtrv-arms:
mm1> rtrv-ne-health:all
```



Note

When you view the alarms, you can find the alarm, “POM-01: 2008-07-27 21:15:09.910 CST,ALM=“PEER LINK A FAILURE”,SEV=MN”. The Cisco PGW 2200 Softswitch raises this alarm because no provisioning is synchronized between PGW 1 and 4 when the PGW 1 and 4 are on different hardware platforms. You can ignore this alarm during the live upgrade. It disappears after the live upgrade is complete. When you view the network element health with the rtrv-ne-health:all command on both PGW 1 and 4, verify the values in the Current in progress calls field on the two platforms are same or close.

Step 28 Log in **PGW 1** as **mgcusr** and switch over from PGW 1 to PGW 4 using the following command:

```
% mm1
mm1> sw-over::confirm
```

Step 29 Repeat [Step 1](#) to [Step 27](#) to migrate PGW 1 to PGW 3 in the same way you did for PGW 2.

Step 30 Set up the database replication between **PGW 3** and **PGW 4** following the procedures described in [“Setting Up Replication”](#) section on page 4-83.

Step 31 Remove the platform.dat file on both **PGW 3** and **PGW 4** using the following commands:

```
% cd /opt/CiscoMGC/local
% rm -f platform.dat
```

This completes the procedure for the live upgrade from Sparc-based platforms to Opteron-based platforms.

Falling Back Overview

Cisco PGW 2200 Softswitch supports both Sparc-based and Opteron-based platforms on Release 9.7(3) and 9.8(1). Prior to Release 9.7(3), only Sparc-based platforms are supported. In order to fall back to a previous release, you need to find out the current Sun platform you are using, the previous Cisco PGW 2200 Softswitch software version to fall back to, and the target Sun platform to fall back to.

See the *Cisco PGW 2200 Softswitch Hardware Installation Guide (Release 7 & 9)* to find out supported Sun platforms for Cisco PGW 2200 Softswitch software Release 9.5(2), 9.6(1), and 9.7(3).

Table 5-4 shows fallback procedures from Cisco PGW 2200 Softswitch Release 9.8 to previous releases across different platforms. The fallback platforms are listed in the first column. You can find the fallback procedure based on your fallback platform and your existing Cisco PGW 2200 Softswitch platform.

Table 5-4 Fallback Procedures from Release 9.8 to Previous Releases Across Different Platforms

| From Release 9.8 | To Release 9.5 or 9.6 | To Release 9.7 | |
|------------------|---|--|--|
| | Sparc-based | Sparc-based | Opteron-based |
| Sparc-based | Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6, page 5-27 | Falling Back to the Cisco PGW 2200 Softswitch Software Release 9.7 without Platform Changes, page 5-26 | Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes, page 5-32 |
| Opteron-based | Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes, page 5-32 | Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes, page 5-32 | Falling Back to the Cisco PGW 2200 Softswitch Software Release 9.7 without Platform Changes, page 5-26 |

Falling Back to the Cisco PGW 2200 Softswitch Software Release 9.7 without Platform Changes

Perform the following procedure to fall back to the Cisco PGW 2200 Softswitch software Release 9.7(3) without platform changes.

-
- Step 1** Log in the Cisco PGW 2200 Softswitch as **root**.
- Step 2** Uninstall the Cisco PGW 2200 Softswitch Release 9.8(1). See the “[Removing a Cisco PGW 2200 Softswitch Software Version: Sample Output for uninstall.sh](#)” section on page E-1.



Note Answer **n** to the question, "Is the uninstall being done in order to upgrade to a new version of the software?", at the beginning of the uninstallation procedure.

- Step 3** Install Cisco PGW 2200 Softswitch software Release 9.7(3).
- See Chapter 3, “Installing Cisco MCG Software Release 9.7 and Higher”, in the *Cisco Media Gateway Controller Software Installation and Configuration (Release 9.7)*.

Step 4 Restore the configuration using the following commands:

```
% cd /opt/CiscoMGC/etc/CONFIG_LIB/  
% tar xvf CFG_backup973.tar
```

Step 5 Restore the snmp folder using the following command:

```
% cd /opt/CiscoMGC  
% tar xvf SNMP_backup973.tar
```

Step 6 Restore the dial plan configurations using the following commands:

```
% tar xvf DP_backup973.tar
```

Step 7 Use **config-lib** command to migrate the configurations.

For details on the config-lib command usage, see [“Transferring Additional Configuration Files” section on page 5-16](#).

Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6

If you encounter problems during migration to Solaris 10, follow these steps to revert to Solaris 8:

- If you had hard disk drives with Cisco PGW 2200 Softswitch Release 9.5(2) or 9.6(1) installed, see the [“Backup Procedure” section on page 5-34](#) and the [“Hard Disk Replacement Procedure” section on page 5-34](#).
- If you replaced disk drives during the migration to Solaris 10, refer to the [“Falling Back to Solaris 8 If Hard Drives Were Replaced During the Upgrade” section on page 5-27](#).
- If you did not replace disk drives during migration but used Veritas Volume Manager to mirror disk drives, refer to the [“Falling Back to Solaris 8 on the Second Disk Drive” section on page 5-28](#).
- If you cannot use the previous options to restore Solaris 8, you need to restore the original Cisco PGW 2200 Softswitch configuration. For further instructions, see the [“Restoring the Original Cisco PGW 2200 Softswitch Software” section on page 5-32](#).

Falling Back to Solaris 8 If Hard Drives Were Replaced During the Upgrade

If you replaced disk drives during the migration to Solaris 10 and need to revert to Solaris 8, perform the following procedure:

Step 1 Stop the operating system and power down the platform:

```
# /usr/sbin/shutdown -g0 -i5
```

Step 2 Remove the new disk drives and install the original disk drives in their original locations using proper anti-static procedures. See the Sun System manual for your platform.

Step 3 Power up the system.

Falling Back to Solaris 8 on the Second Disk Drive

If the upgrade is not successful, you can fall back to Solaris 8:

Step 1 Stop the operating system.

```
# init 0
```

Step 2 From the **ok** prompt, boot the secondary boot disk.

```
ok boot disk1
```

Step 3 Log in as **mgcusr** and verify that the system boots Solaris 8 and the Cisco PGW 2200 Softswitch software starts properly.

a. Enter the following command to verify the operating system version.

```
% uname -r
```

Text similar to the following is displayed:

```
5.8
```



Note “5.8” indicates that the system is running the Solaris 8 operating system.

b. Start the MML command interface and use the following command to see if the software starts properly.

```
mml> rtrv-ne
```

Step 4 Verify that the correct version of the Cisco PGW 2200 Softswitch software is running.

Step 5 Log in again as **root** and start **vxdiskadm**.

```
# vxdiskadm
```

Text similar to the following is displayed:

```
Volume Manager Support Operations
Menu: VolumeManager/Disk
```

```

1   Add or initialize one or more disks
2   Encapsulate one or more disks
3   Remove a disk
4   Remove a disk for replacement
5   Replace a failed or removed disk
6   Mirror volumes on a disk
7   Move volumes from a disk
8   Enable access to (import) a disk group
9   Remove access to (deport) a disk group
10  Enable (online) a disk device
11  Disable (offline) a disk device
12  Mark a disk as a spare for a disk group
13  Turn off the spare flag on a disk
list List disk information

?   Display help about menu
??  Display help about the menuing system
q   Exit from menus
```

```
Select an operation to perform
```

Step 6 Enter **4** to remove a disk for replacement.

Remove a disk for replacement
Menu: VolumeManager/Disk/RemoveForReplace

Use this menu operation to remove a physical disk from a disk group, while retaining the disk name. This changes the state for the disk name to a "removed" disk. If there are any initialized disks that are not part of a disk group, you will be given the option of using one of these disks as a replacement.

Step 7 Enter **list** to list all disks:

Enter disk name [<disk>,list,q,?] **list**

Disk group: rootdg

| DM NAME | DEVICE | TYPE | PRIVLEN | PUBLEN | STATE |
|--------------|----------|--------|---------|----------|----------|
| dm rootdiska | - | - | - | - | NODEVICE |
| dm rootdiskb | c0t1d0s2 | sliced | 4711 | 35363560 | - |

Step 8 Enter **rootdiska** at the following prompt:

Enter disk name [<disk>,list,q,?] **rootdiska**

The following volumes will lose mirrors as a result of this operation:

opt rootvol swapvol usr var

No data on these volumes will be lost.

The requested operation is to remove disk rootdiska from disk group rootdg. The disk name will be kept, along with any volumes using the disk, allowing replacement of the disk.

Select "Replace a failed or removed disk" from the main menu when you wish to replace the disk.

Step 9 Enter **y** and press **Enter** at the prompt to continue:

Continue with operation? [y,n,q,?] (default: y)

Removal of disk rootdiska completed successfully.

Step 10 Enter **n** at the prompt and then **q** to quit vxdiskadm:

Remove another disk? [y,n,q,?] (default: n) **n**

Volume Manager Support Operations
Menu: VolumeManager/Disk

- 1 Add or initialize one or more disks
- 2 Encapsulate one or more disks
- 3 Remove a disk
- 4 Remove a disk for replacement
- 5 Replace a failed or removed disk
- 6 Mirror volumes on a disk
- 7 Move volumes from a disk
- 8 Enable access to (import) a disk group
- 9 Remove access to (deport) a disk group
- 10 Enable (online) a disk device
- 11 Disable (offline) a disk device
- 12 Mark a disk as a spare for a disk group

```

13      Turn off the spare flag on a disk
list    List disk information

?       Display help about menu
??      Display help about the menuing system
q       Exit from menus

```

Select an operation to perform: **q**

Goodbye.

Step 11 Use the **vxdisk** command to verify that rootdiska is removed.

```
# vxdisk list
```

Step 12 Shut down and boot from disk1.

```
# init 0
ok boot disk1
```

Step 13 Log in as **root** and run **vxdiskadm**.

```
# vxdiskadm
```

Step 14 Enter **5** to replace a failed disk.

```
Replace a failed or removed disk
Menu: VolumeManager/Disk/ReplaceDisk
```

Use this menu operation to specify a replacement disk for a disk that you removed with the "Remove a disk for replacement" menu operation, or that failed during use. You will be prompted for a disk name to replace and a disk device to use as a replacement. You can choose an uninitialized disk, in which case the disk will be initialized, or you can choose a disk that you have already initialized using the Add or initialize a disk menu operation.

Step 15 Enter **list** at the following prompt:

```
Select a removed or failed disk [<disk>,list,q,?] list
```

Disk group: rootdg

| DM NAME | DEVICE | TYPE | PRIVLEN | PUBLEN | STATE |
|--------------|--------|------|---------|--------|---------|
| dm rootdiska | - | - | - | - | REMOVED |

Step 16 Enter **rootdiska** at the following prompt:

```
Select a removed or failed disk [<disk>,list,q,?] rootdiska
```

Step 17 Enter **list** at the following prompt:

```
Select disk device to initialize [<address>,list,q,?] list
```

| DEVICE | DISK | GROUP | STATUS | |
|--------|-----------|--------|--------|-------|
| c0t0d0 | - | - | | error |
| c0t1d0 | rootdiskb | rootdg | online | |

Type c0t0d0 to select disk device to initialize

The following disk device has a valid VTOC, but does not appear to have been initialized for the Volume Manager. If there is data on the disk that should NOT be destroyed you should encapsulate the existing disk partitions as volumes instead of adding the disk as a new disk.

Output format: [Device_Name]

c0t0d0

Step 18 To initialize the disk instead of encapsulating, enter **y** and press **Enter**.



Note To encapsulate the disk, enter **n** and press **Enter**.

Instead of encapsulating, initialize? [y,n,q,?] (default: n) **y**

The requested operation is to initialize disk device c0t0d0 and to then use that device to replace the removed or failed disk rootdiska in disk group rootdg.

Step 19 Enter **y** and press **Enter** to continue.

Type Y at the following prompt:

Continue with operation? [y,n,q,?] (default: y) **y**

Replacement of disk rootdiska in group rootdg with disk device c0t0d0 completed successfully.

This will begin recovery of the disk and the mirrors will re-synchronize automatically.

Step 20 Enter **n** and press **Enter** when asked to replace the disk.

Replace another disk? [y,n,q,?] (default: n) **n**

Volume Manager Support Operations
Menu: VolumeManager/Disk

```

1      Add or initialize one or more disks
2      Encapsulate one or more disks
3      Remove a disk
4      Remove a disk for replacement
5      Replace a failed or removed disk
6      Mirror volumes on a disk
7      Move volumes from a disk
8      Enable access to (import) a disk group
9      Remove access to (deport) a disk group
10     Enable (online) a disk device
11     Disable (offline) a disk device
12     Mark a disk as a spare for a disk group
13     Turn off the spare flag on a disk
list   List disk information

?      Display help about menu
??     Display help about the menuing system
q      Exit from menus

```

Step 21 Enter **q** and press **Enter** to quit.

Select an operation to perform: **q**

Goodbye.



Note Allow enough time to let both disks synchronize. Depending on the system, this can take 5 to 6 hours.

- Step 22** Use the **vxprint** command to make sure disk0 is remirrored to disk1. When this is complete, shut down the platform and boot.

```
# vxprint -ht

# init 0
ok boot
```

- Step 23** Repeat [Step 3](#) to verify that the correct software is running.

Restoring the Original Cisco PGW 2200 Softswitch Software

If you cannot use the previous procedures to revert to Solaris 8, follow these steps to restore the original Cisco PGW 2200 Softswitch software configuration:

- Step 1** Install Solaris 8 Operating System using the procedures in the “[Sun Solaris 8 Operating System Installation](#)” chapter.
- Step 2** Install the original Cisco PGW 2200 Softswitch Software using the procedures in the “[Installing the Cisco MGC Software 9.2\(x\) and Higher Releases](#)” section.
- Step 3** Restore the data files using the procedures in “[Restoring the System](#)” section.

Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes

If you need to fall back to previous Cisco PGW 2200 Softswitch software releases with platform changes, use the following procedure.

- Step 1** Verify that the pom.dataSync variable is set to **False** on the active and standby pair of Cisco PGW 2200 Softswitches. To view or modify the pom.dataSync variable, use an editor such as vi to edit /opt/CiscoMGC/etc/XECfgParm.dat.



Note

You must set pom.dataSync to false on the active and standby pair of Cisco PGW 2200 Softswitches before you perform the fallback.



Note

If you modify the pom.dataSync variable, make sure you save the file, /opt/CiscoMGC/etc/XECfgParm.dat. You don't have to restart the Cisco PGW 2200 Softswitch after the modification of this variable.

- Step 2** Log in the standby Cisco PGW 2200 Softswitch as **root**.
- Step 3** Stop the Cisco PGW 2200 Softswitch software using the following command:

```
# /etc/init.d/CiscoMGC stop
```

- Step 4** Remove the platform from the current network environment and replace it with the old version Cisco PGW 2200 Softswitch.
- Step 5** Log in the old version Cisco PGW 2200 Softswitch as **root**.
- Step 6** Configure the required network parameters on PGW 4 to make PGW 4 a replacement of PGW 2.
- Step 7** Start the old version Cisco PGW 2200 Softswitch software using the following command:
- Step 8** Use the following commands to change the login to mgcusr on the old version platform and verify that the Cisco PGW 2200 Softswitch software started successfully.

```
# su - mgcusr
% mm1
mm1> rtrv-ne
mm1> rtrv-softw:all
mm1> rtrv-als:
mm1> rtrv-ne-health:all
```



Note When you view the alarms, you can find the alarm, “POM-01: 2008-07-27 21:15:09.910 CST,ALM=“PEER LINK A FAILURE”,SEV=MN”. The Cisco PGW 2200 raises this alarm because no provisioning is synchronized between new version active Cisco PGW 2200 Softswitch and old version one when the two Cisco PGW 2200 Softswitches are on different hardware platforms. You can ignore this alarm during the fallback. It disappears after the fallback is complete.

- Step 9** Log in the Cisco PGW 2200 Softswitch as **mgcusr** and switch over from new version Cisco PGW 2200 Softswitch to the old version platform using the following command:
- ```
% mm1
mm1> sw-over::confirm
```
- Step 10** Repeat Step 2 to Step 9 to fall back the new version Cisco PGW 2200 Softswitch to the old version platform.
- Step 11** Verify that the pom.dataSync variable is set to True on the active and standby pair of old version Cisco PGW 2200 Softswitches.

This completes the procedure for falling back to previous Cisco PGW 2200 Softswitch software releases with platform changes.

## Replacing Hard Disks on an Existing Solaris 10 Platform

If you need to replace the hard disks on an existing Cisco PGW 2200 Softswitch system running the Solaris 10 operating system and Cisco PGW 2200 Softswitch software Release 9.8, use the steps in the following sections.

## Backup Procedure

Before restoring the mgcbbackup file, you must install the same Cisco PGW 2200 Softswitch software release and the patch level that was originally on the platform. Follow these steps to back up the system:

**Step 1** Log in as **root** and enter the following command to stop the Cisco PGW 2200 Softswitch application:

```
/etc/init.d/CiscoMGC stop
```

**Step 2** Complete one of the following steps to back up the system:

- **Local Tape Backup**—Using the mgcbbackup utility, back up the system to the local tape drive.
- **Remote File Server Backup**—Using the mgcbbackup utility, back up the system to the local directory. Use the mgcbbackup utility to list the filename of the last backup and use ftp to transfer the file to a remote file system.

```
/opt/CiscoMGC/local/mgcbbackup -d /dev/rmt/0
```

```
/opt/CiscoMGC/local/mgcbbackup -d /var/tmp/upgrade
```



### Note

The backup file is stored in the specified directory path in the following format:  
mgc\_<hostname>\_<yyyymmdd>\_<hhmmss>\_backup.tar

Where:

- *hostname* is the name of the Cisco PGW 2200 Softswitch host, such as MGC-01.
  - *yyyymmdd* is the date the backup file is created, in a year-month-day format, such as 20011130.
  - *hhmmss* is the time the backup file is created, in an hour-minute-second format, such as 115923.
- Enter the following command to list the files in your backup directory. Verify that the backup was successful.

```
/opt/CiscoMGC/local/mgcbbackup -l
```



### Caution

You must now move the backup file to a remote file server using the ftp program so that you can recover it if you need to return the Cisco PGW 2200 Softswitch to the previous version of Solaris or Cisco PGW 2200 Softswitch software. You are responsible for providing the mechanism and storage location.

**Step 3** Enter the following command to stop the operating system and power down the platform:

```
/usr/sbin/shutdown -g0 -i5
```

The system backup is now complete.

## Hard Disk Replacement Procedure

Follow these steps to replace the hard disk.

**Caution**

Be sure to follow the appropriate anti-static procedures when performing this procedure.

- 
- Step 1** Label the hard disks with their current locations and remove them from the system. See the Sun System manual for your platform for the proper procedure.
- Step 2** Install the new hard disks in the same slots as the existing hard disks. See the Sun System manual for your platform for the proper procedure.
- 

## Loading the Solaris 10 Operating System

Power on the platform and follow the procedures in [Chapter 2, “Installing the Sun Solaris 10 Operating System,”](#) to install the Solaris 10 operating system.

## Loading the Sun Solaris 10 Operating Environment Packages

Before you install the Cisco PGW 2200 Softswitch software, you need to load the Sun Solaris 10 Operating Environment packages. To load the environment packages, complete the steps in the section [Loading the Sun Solaris 10 Operating Environment](#).

## Installing the Cisco PGW 2200 Softswitch

Install the same release and patch levels of Cisco PGW 2200 Softswitch software that were originally on the host, using the procedures provided in the [Chapter 3, “Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher.”](#)

## Restoring the System

- 
- Step 1** Complete one of the following steps to restore the system:
- Local Tape Backup**—Using the mgcrestore utility, enter the following command to restore the system from the local tape drive:  

```
/opt/CiscoMGC/local/mgcrestore -d /dev/rmt/0
```
  - Remote File Server Backup**—Using the ftp program, retrieve the file created in [Step 2b](#) of the “Backup Procedure” section on [page 5-34](#), and place it in the /opt/CiscoMGC/var/log directory. Using the mgcrestore utility, restore the system.  

```
/opt/CiscoMGC/local/mgcrestore -d /var/tmp/upgrade -f filename
```

where *filename* is the filename created in [Step 2b](#) of the section “Backup Procedure” section on [page 5-34](#).
- Step 2** Enter the following command to start the Cisco PGW 2200 Softswitch software:
- ```
# /etc/init.d/CiscoMGC start
```

The hard disk replacement on an existing platform running the Solaris 10 operating system and Cisco PGW 2200 Softswitch software Release 9.8 is now complete.



CHAPTER 6

Configuring the Local Area Network Switch

This chapter provides a brief overview of the local area network (LAN) switches (Cisco Catalyst Switch family) in your solution. The LAN switch connects the Cisco PGW 2200 Softswitch hosts to the media gateways (MGWs) or to the Cisco IP Transfer Point LinkExtender (ITP-L). A LAN switch is not provided with the Cisco PGW 2200 Softswitch.

LAN Switch Overview

The LAN switch is used in the Cisco PGW 2200 Softswitch node to extend virtual LANs (VLANs) across platforms through backbone Ethernet connections, when necessary.

[Figure 6-1](#) illustrates an example of a fault-tolerant control signaling network using dual Cisco Catalyst LAN switches.



Note

Make sure that the duplex on the Cisco catalyst port is correctly configured and that there is no duplex mismatch between the switch and the Cisco PGW 2200 Softswitch network interface card (NIC). Otherwise, some SS7 messages, although received at the Cisco PGW 2200 Softswitch NIC, might be ignored by the Cisco PGW 2200 Softswitch call processing engine.

Figure 6-1 Sample Configuration of a Duplex LAN Switch



Catalyst 2900 XL Series

See the following web sites for hardware and software documentation for the Catalyst 2900 XL series:

<http://www.cisco.com/warp/public/cc/pd/si/casi/ca2900xl/prodlit/index.shtml>

<http://www.cisco.com/univercd/cc/td/doc/product/lan/c2900xl/index.htm>

Catalyst 5500 and 5000 Series

See the following web sites for hardware and software documentation for the Catalyst 5500 series (5500, 5509, and 5505) and Catalyst 5000 series (5000 and 5002) switches:

http://www.cisco.com/warp/public/cc/pd/si/casi/ca5000/prodlit/lanem_ds.htm

<http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/index.htm>

**Note**

For information about the correct Cisco IOS software version, see *Release Notes for the Cisco PGW 2200 Softswitch Release 9.8*.

For information on the image that your switch supports, see the documentation that came with your switch.

If you have questions or need assistance, see the “[Obtaining Documentation and Submitting a Service Request](#)” section on page x of the Preface.



APPENDIX **A**

XECfgParm.dat File Parameters

This appendix describes the parameters found in the XECfgParm.dat file for the Cisco PGW 2200 Softswitch software Release 9.x and how they are used by the media gateway controller (MGC).

Understanding the XECfgParm.dat File Format

The XECfgParm.dat file contains system-wide as well as system tuning parameters. All fields in this file are written in the `parm = value` format. It supports a hash mark (#) in the first column to denote the entire line as a comment.

Parameters are prefixed with a quantifier to specify the domain of the parameter. An asterisk (*) preceding the parameter indicates that the parameter setting should be used by the entire system. A component name limits the scope to the specified component.

XECfgParm.dat parameters are arranged syntactically as follows:

```
facilityName.parameterName = parameterValue
```

Cisco PGW 2200 Softswitch XECfgParm.dat Files

Facility Names

The following facility names are valid:

- almM—Alarm Manager
- amDmpr—Alarm/Measurement Dumper
- cdrDmpr—CDR Dumper
- cfgM—Configuration Manager
- engine—Call processing engine
- foverd—Failover Daemon
- H.248—H.248
- ioChanCtl—Controls all channel controllers
- ioChanMgr—I/O Channel Managers
- ISDNBRI—ISDN BRI

- IUA—IUA Parameters
- logger—Log Server
- M3UA—M3UA Parameters
- measM—Measurement Manager
- mmdb—Main Memory Data Base Process
- MML—MML
- mmSAgt—Measurement Manager SNMP Agent
- OPERSAGT—Operational SNMP Agent
- pom—Provisioning Object Manager
- procM—Process Manager
- product—Network Element
- PROVSAGT—Provisioning SNMP Agent
- RadiusAccounting—Radius Accounting Parameters
- replicator—Replicator
- SIP—SIP
- SUA—SUA Parameters
- TCAP—TCAP Capabilities

If no match is found for a facility-specific parameter, the file is searched for a match on the default facility.

Special Parameters

- callver—Call verification utility
- diskmonitor—Disk monitor shell script
- XE—Execution environment

Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Parameter Definitions

The XECfgParm.dat file configuration parameters for the Cisco PGW 2200 Softswitch software release 9.x are presented alphabetically in [Table A-1](#).



Caution

This list of parameters is provided as a reference. **Do not edit** any parameters unless they are listed in the following table or unless you have been instructed to do so by Cisco technical support; otherwise, your system might not work as intended.

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|------------------------------------|---|
| *.actiononchargetableaccessfailure | <p>Allows you to specify the action to take when there is a failure to access the meter pulse tariff table.</p> <p>Default: 0</p> <p>Valid values are: 0 (Continue Call) and 1 (Release Call).</p> |
| *.autonomous | <p>Enables a process, for example the engine, to be started without the system.</p> <p>Default: false</p> <p>Note Do not change this value.</p> |
| *.chargingmode | <p>Allows you to specify the charging mode for non-Intelligent Network (IN) calls which determines the treatment of received Metered Pulse Messages (MPMs).</p> <p>Default: 1</p> <p>Valid values are: 1 (AddOnCharge), 2 (ReplaceCharge), and 3 (FreeOfCharge).</p> |
| *.chargingtarifftype | <p>Allows you to specify which type of tariff table (Meter Pulse or Tariff-Rate/Scale-Factor) is to be accessed in the absence of a tariff table identifier in the charge result.</p> <p>Default: 1</p> <p>Valid values are: 0 (tariff-rate/scale-factor) (default) and 1 (meter pulse).</p> |
| *.chkPtPort | <p>Port number used between peer components or processes for check-pointing.</p> <p>Value: Any unused port number.</p> <p>Default: 2001</p> <p>Leave this value as the default.</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in an active/standby configuration, both fields in the XECfgParm.dat files should contain the same value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------|--|
| *.ClearingLocation | <p>Specifies whether to override the default location field in the call context for any call, regardless of which network device released the call. This enables you to define a default location in Release messages for any call, which can differ from the default location set in the type definition of the protocol.</p> <p>Note This property has precedence over the value set in the *.DefaultLocation parameter.</p> <p>Values:</p> <ul style="list-style-type: none"> 0—Normal mapping behavior, the existing Clearing Location value from the Call Context data is used. 1—LOCATION_USER 2—LOCATION_PRIVATE_LOCAL 3—LOCATION_PUBLIC_LOCAL 4—LOCATION_TRANSIT 5—LOCATION_PUBLIC_REMOTE 6—LOCATION_PRIVATE_REMOTE 7—LOCATION_INTERNATIONAL 8—LOCATION_INTERWORKING 9—LOCATION_LOCAL_INTERFACE 10—LOCATION_LOCAL_LOCAL 11—LOCATION_LOCAL_REMOTE 12—LOCATION_PACKET_MANAGER 13—LOCATION_UNKNOWN <p>Default: 0 (Normal mapping behavior)</p> <p>Note Option 13 may not be valid for all solutions.</p> |
| *.CPUTimerInterval | <p>Samples the frequency of CPU utilization.</p> <p>This parameter is set automatically when you specify a Cisco MGC type in the engine.SysVirtualSwitch parameter. Any attempt to modify this parameter is overwritten.</p> <p>Default: 3000 msec (3 seconds)</p> <p>Note During the startup of the Cisco PGW 2200 Softswitch software, this parameter will be set automatically to tune the system for optimal performance.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|----------------------------|--|
| *.CustSpecificINAPHandling | <p>Controls INAP (Intelligent Network Application Protocol) behavior, including advertised application context.</p> <p>Values:</p> <ul style="list-style-type: none"> • tinap • finap • rinap • sinap <p>Default: Null</p> <p>To enable network transfer and DTMF transfer services, set this parameter to sinap. The following new CS2 application context is populated in the dialogue body of the INAP message:</p> <p>itu-t(0) recommendation(0) q(17) q1228(1228) cs2(2) ac(3) id-ac-cs2-ssf-scfGenericAC(4) urn:oid:0.0.17.1228.2.3.4</p> |
| *.dataDir | <p>Location of the data directory.</p> <p>Default: ../var</p> <p>Note Do not change this value.</p> |
| *.dataSourceName | <p>Used by the MMDB to obtain the data source name for the ODBC connection.</p> <p>Default: howdydb</p> <p>Note Do not change this value.</p> |
| *.debugLevel | <p>Determines level of debugging detail if debugging is initiated.</p> <p>Default: high</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------|--|
| *.DefaultLocation | <p>Specifies whether to override the default location field in the call context data for calls released by the Cisco PGW 2200 Softswitch. This enables you to define a default location in Release messages for calls released by the Cisco PGW 2200 Softswitch, which can differ from the default location set in the type definition of the protocol.</p> <p>Note If the call is not released by the Cisco PGW 2200 Softswitch, this property has no impact.</p> <p>Values:</p> <ul style="list-style-type: none"> • 0—Normal protocol-defined default location value in the Call Context data is used. • 1—LOCATION_USER • 2—LOCATION_PRIVATE_LOCAL • 3—LOCATION_PUBLIC_LOCAL • 4—LOCATION_TRANSIT • 5—LOCATION_PUBLIC_REMOTE • 6—LOCATION_PRIVATE_REMOTE • 7—LOCATION_INTERNATIONAL • 8—LOCATION_INTERWORKING • 9—LOCATION_LOCAL_INTERFACE • 10—LOCATION_LOCAL_LOCAL • 11—LOCATION_LOCAL_REMOTE • 12—LOCATION_PACKET_MANAGER • 13—LOCATION_UNKNOWN <p>Default: 0 (Normal protocol-defined default value)</p> <p>Note Option 13 may not be valid for all solutions.</p> |
| *.desiredPlatformState | <p>Determines the desired platform state.</p> <p>Values:</p> <ul style="list-style-type: none"> • master, if you have two (active and standby) Cisco PGW 2200 Softswitch hosts • slave, if you have two (active and standby) Cisco PGW 2200 Softswitch hosts • standalone, if you have a single-host system <p>Default: none</p> <p>Note The value used is site specific. For example, use the values master and slave if you have two (active and standby) Cisco PGW 2200 Softswitch hosts. Enter standalone if you have a single-host system.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------------|---|
| *.DisableCCBSoverTunneledQSIG | <p>Specifies the protocol used to deliver Call Back Services messages over the network.</p> <p>Valid Values:</p> <ul style="list-style-type: none"> 0—Callback Services are enabled using QSIG 1—Callback Services are enabled using the QBE interface <p>Default Value: 0</p> |
| *.disableMeas | <p>Disables the collection of measurement data.</p> <p>Values:</p> <ul style="list-style-type: none"> true—Disables data collection false—Data is collected <p>Default: false</p> |
| *.disablemultiplecdrs | <p>Allows you to disable the multiple CDRs per call (for example, multiple occurrences of Answer and Release CDB messages) for situations where the downstream billing system does not support this feature.</p> <p>Default: 1</p> <p>Valid values are 0 (multi CDRs enabled) and 1 (multi CDRs disabled).</p> |
| *.eventTrace | <p>Used by developers only to trace events at the application level.</p> |
| *.FastConnect | <p>Allows LCM messages to pass through.</p> <p>Values:</p> <ul style="list-style-type: none"> 0—Passes all signals to LCM. 1—Disables signal to LCM for “CallProceeding” received from NAS. 2—Disables signal to LCM for “CallProceeding” or “Progress” received from NAS. 3—Disables signal to LCM for “Call Proceeding”, “Progress,” or “Alerting” received from NAS. |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|---------------------------|--|
| *.GWClearChannelAlgorithm | <p>Allows the use of the clear channel 64K unrestricted data transfer between gateways. Different gateways support different codecs. There is a command to see all the codecs supported on the gateway, including the clear channel codec.</p> <p>For example on VISM, the command is dspscodecsparams. The Cisco PGW 2200 Softswitch passes any string that is defined on it. The following is what the command shows on VISM:</p> <pre>Codec Codec String Period (ms) Preference Type 1 - G.711u PCMU 10 8 0 2 - G.711a PCMA 10 7 8 3 - G.726-32K G726-32 10 5 2 4 - G.729a G729a 10 2 96 5 - G.729ab G729ab 10 1 96 6 - clr chan CCD 10 9 96 7 - G.726-16K G726-16 10 3 96 8 - G.726-24K G726-24 10 4 96 9 - G.726-40K G726-40 10 6 96 11 - G.723.1- G723H 30 10 96 12 - G.723.1a G723AH 30 11 96 13 - G.723.1- G723L 30 12 96 14 - G.723.1a G723AL 30 13 96</pre> <p>Values: null or the valid codec string</p> <p>Default: null</p> |
| *.homeDirRoot | <p>Location of the home directory.</p> <p>Default: /opt/CiscoMGC</p> <p>Note Do not change this value.</p> |
| *.ioChanMgr.IPCTimer | <p>Specifies the frequency at which the queue is scanned for RSIP messages. When this parameter is left at its default value (0), the system uses a base parameter value. You can modify this parameter if a problem occurs.</p> <p>Valid values: Any integer</p> <p>Default value: 0</p> |
| *.IP_Addr1 | IP address of interface 1; used for signaling. |
| *.IP_Addr2 | IP address of interface 2; used for signaling. |
| *.IP_Addr3 | IP address of interface 3 (if installed); used for signaling. |
| *.IP_Addr4 | IP address of interface 4 (if installed); used for signaling. |
| *.ipAddrLocalA | <p>First local IP address; used for checkpointing and failover heartbeats if you have active/standby Cisco PGW 2200 Softswitch hosts.</p> <p>Note This is typically the same value as *.IP_Addr1.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--|--|
| *.ipAddrLocalB | <p>Second local IP address; used for checkpointing and failover heartbeats if you have active/standby Cisco PGW 2200 Softswitch hosts.</p> <p>Note If your configuration does not use an external card, leave this setting as the default value: 0.0.0.0.</p> |
| *.ipAddrPeerA | <p>First corresponding peer IP address; used for checkpointing and failover heartbeats.</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in an active/standby configuration, this value is the IP address of the second host.</p> |
| *.ipAddrPeerB | <p>Second corresponding peer IP address; used for checkpointing and failover heartbeats.</p> <p>Note If your configuration does not use an external card, leave this setting as the default value, 0.0.0.0.</p> |
| *.IP_NextHop1 *.IP_NextHop2 *.IP_NextHop3 *.IP_NextHop4 *.IP_NextHop5 *.IP_NextHop6 *.IP_NextHop7 *.IP_NextHop8 | <p>Specifies the IP addresses of up to eight next hop counters. These IP addresses are used when the next hop router IP addresses on the Cisco PGW 2200 Softswitch hosts do not match.</p> <p>Default: 0.0.0.0</p> <p>Valid values: An IP address expressed in dotted decimal notation.</p> |
| *.IUA.maxNasExtNodes | <p>Specifies the maximum number of external nodes that can be defined with an ISDN signaling type of IUA. This number also represents the maximum number of IUA associations that can be provisioned.</p> <p>Valid value: 256</p> <p>Note Do not change this value.</p> |
| *.IUA.maxNasPathsPerExtNode | <p>Specifies the maximum number of NAS signaling services that can be assigned to each external node with an ISDN signaling type of IUA.</p> <p>Valid value: 112</p> <p>Note Do not change this value.</p> |
| *.IUA.maxNasPaths | <p>Specifies the maximum number of IUA signaling services that can be provisioned.</p> <p>Valid value: 1500</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters


| Configuration Parameter | Definition |
|-------------------------|--|
| *.LISupport | <p>Enables Cisco PGW 2200 Softswitch to be used for Lawful Intercept.</p> <p>Note Set this parameter to true to enable Cisco PGW 2200 Softswitch support for Lawful Intercept.</p> <p>Default: false</p> |
| *.logDirectory | <p>Location of the active and rotated log files.</p> <p>Default: ../var/log</p> <p>Note Make sure the log file has write permission for the LogServer.</p> |
| *.logFileNamePrefix | <p>Combined with the .log extension, defines the filename for log files.</p> <p>Default: platform</p> <p>Example: engine</p> <p>Note This setting can also redirect process messages from the default log file to a specified log file. For example, engine.logFileNamePrefix = engine instructs the log server to redirect messages from the engine process to the dedicated engine.log file. This functions with or without *.logDirectory.</p> |
| *.logMsgDrop | <p>Controls whether the log server drops debug-level messages when the UNIX domain socket used for log server communication is full.</p> <p>Values:</p> <ul style="list-style-type: none"> • true—Debug messages are dropped. • false—Debug messages are not dropped. <p>Default: true</p> <p> Caution If you set this parameter to false for the engine and the engine logging level is Debug, the system can fail at high call rates.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters


| Configuration Parameter | Definition |
|-------------------------|---|
| *.logPrio | <p>Defines the initial default logging level used by logging clients when sending messages to the logging server. Use the set-log MML command to change logging levels after installation. You can specify different logging levels for each process. For example, engine.logPrio = Info</p> <p>Note This setting is the only way to modify the logging level of the current MML process. The set-log command does not affect current MML process logging levels.</p> <p>This parameter provides debug level LogPrio support in XECfgParm.dat for individual channel controllers. You can use the following to turn on IOCC logging:</p> <ul style="list-style-type: none"> • H248.logPrio = Debug • SS7.logPrio = Debug • EISUP.logPrio = Debug • MGCP.logPrio = Debug • ISDNIP.logPrio = Debug • ISDNL3.logPrio = Debug • SIP.logPrio = Debug • TALI.logPrio = Debug • TCAP.logPrio = Debug <p> Caution Be sure to use the actual process name, not the MML name, of the channel controller. Note that the IOCC name is case-sensitive.</p> <p>Values:</p> <ul style="list-style-type: none"> • Debug—Used only for detailed debugging messages. Logging at this priority is not recommended during production because this causes a large volume of messages to be logged, which degrades system performance and can cause failover problems. • Trace—These messages capture protocol traffic. This priority is used for debugging. • Info—These messages indicate an operation that is proceeding as expected. • Warning—These messages indicate a problem exists that does not prevent the system from operating. This is the normal, default logging level for production. • Error—These messages indicate an unexpected error that is recoverable but degrades performance. |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--------------------------------|---|
| *.logPrio (<i>continued</i>) | <ul style="list-style-type: none"> Critical—These messages indicate errors so severe that a process cannot continue operating. <p>Note Do not change this value unless you are debugging.</p> |
| *.LongCallTime | <p>Used to generate ongoing Call Data Block (CDB) 1060. CDB 1060 (on-going call event) indicates a long call in progress.</p> <p>Default: 21600000 milliseconds (6 hours)</p> <p>Minimum value required: 60000 milliseconds (60 seconds)</p> <p>Note Typically, you should leave the value 21600000 milliseconds (6 hours) as the default. You can change it, if necessary, based on billing requirements.</p> <p>If you enter a value less than the required minimum of 60000 milliseconds, it defaults to 6 hours.</p> |
| *.M3UA.maxSigServices | <p>Defines the maximum number of Message Transfer Part (MTP) Level 3 User Application (M3UA) signaling services. It also defines the maximum number of M3UA routing keys.</p> <p>Value: 1536</p> <p>Note Do not change this value.</p> |
| *.M3UA.maxOPCs | <p>Defines the maximum number of M3UA originating point codes (OPCs).</p> <p>Value: 64</p> <p>Note Do not change this value.</p> |
| *.M3UA.maxRoutesPerOpDpc | <p>Defines the maximum number of M3UA routes per OPC/destination point code (DPC) pair.</p> <p>Value: 2</p> <p>Note Do not change this value.</p> |
| *.M3UA.maxSgp | <p>Defines the maximum number of M3UA SS7 signaling gateway processes.</p> <p>Value: 96</p> <p>Note Do not change this value.</p> |
| *.maxLinksPerSessionSet | <p>Sets the maximum number of SS7 links contained in a session set. This is based on the maximum number of SS7 links in a Cisco ITP-L.</p> <p>Value: 4</p> <p>Default: 4</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--|--|
| *.maxLocationLabels (Added in Release 9.6(1)) | <p>Specifies the maximum number of location labels that can be provisioned.</p> <p>Valid value: 3000</p> <p>Note Do not change this value.</p> |
| *.maxNumDChansPerPort | <p>Specifies the maximum number of D-channels that can be provisioned per IP address or port.</p> <p>Valid values: Any integer (1 to 2000)</p> <p>Default value: 2000</p> |
| *.maxnumRLMports | <p>Used during provisioning to verify that the limit on the number of unique ports for RLM links is not exceeded.</p> <p>Value: 8</p> <p>Default: 8</p> |
| *.MgcpBehavior | <p>Due to Media Gateway Control Protocol (MGCP) gateway differences in return codes, the Cisco PGW 2200 Softswitch MGCP behavior must be configured to the appropriate value in order to properly interface with the gateway.</p> <p>Value range: Integer</p> <ul style="list-style-type: none"> • 0—No action. <ul style="list-style-type: none"> – Do not use this value for switched solutions. – Do not change this value for nailed solutions. • 1—Value for non-IOS-based MGCP gateways such as VISM. • 2—Value for IOS-based gateways such as AS5300, AS5400, and AS5350s. <p>Default: 0</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|------------------------------|--|
| *.MMLManualBlockingCic | <p>Allows the Cisco PGW 2200 Softswitch to manually block channels that do not respond to Release, Restart, or Disconnect messages.</p> <p>This feature was introduced in Release 9.6(1).</p> <p>Values:</p> <ul style="list-style-type: none"> 0 = The MML_Manual_BLOCK capability is disabled. 1 = The MML_Manual_BLOCK capability is enabled. If the Cisco PGW 2200 Softswitch does not receive acknowledgement (ACK) of Release and Restart messages or a Disconnect message from the remote SS7 gateway, the Cisco PGW 2200 Softswitch performs the following actions: <ul style="list-style-type: none"> Manually blocks the CIC (Circuit Identification Code) Sends a BLO message to the remote SS7 gateway Releases the call <p>Default: 0</p> |
| *.numberOfThreads | <p>This parameter is set automatically when you specify a Cisco MGC type in the engine.SysVirtualSwitch parameter. Any attempt to modify this parameter is overwritten.</p> <p>Values:</p> <ul style="list-style-type: none"> 0—single CPU 1—two CPUs 2—four CPUs <p>Default: 0</p> <p>Note If you have a multi-CPU system (1 or 2), you must set engine.SysGeneratedCode to true.</p> <p>Note During the startup of the Cisco PGW 2200 Softswitch software, this parameter will be set automatically to tune the system for optimal performance.</p> |
| *.OverdecadicDigitsSupported | <p>This parameter controls the method of loading dial plan tables and instructs the system whether to expect overdecadic (base 16) or regular decadic (base 10) digits in dial plans, routing, and other digit streams.</p> <p>Correct setting of this parameter depends on local network interconnect agreements and the expected data format.</p> <p>Enter true to use overdecadic digits (0-F).</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--------------------------|--|
| *.OwnCli | Common language location identifier; used for circuit query validation when circuit queries are supported. Value: Alphanumeric string, up to 11 characters. Default: TTTT-SS-BB-XXX Example: 1111-22-33-444 |
| *.PartialCliPnoIdentity | Contains a 3-digit integer representing the PNO Identity field of the partial CLI parameter. Valid values: 0 (default) through 999 |
| *.PartialCliSwitchNumber | Contains a 3-digit integer representing the Switch Number field of the partial CLI parameter. Valid values: 0 (default) through 999 |
| *.PartialCliTypeOfSwitch | Contains a 2-digit integer representing the Type of Switch field of the partial CLI parameter. Valid values: 0 (default) through 99 |
| *.platformId | Enables the signaling controller to run more than one instance of the Cisco PGW 2200 Softswitch software concurrently. Default: 1 Note Do not change this value. |
| *.popDataSync | Specify true if master/slave mode is being used. |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------|---|
| *.RedirectingATree | <p>Used to control A-number screening/analysis via A-digit tree. This parameter allows the analysis system to use the A-Digit tree for mapping to the BLACKLIST function on the Redirecting CLI value. It uses the A-Digit tree to allow for black screening on the redirecting number parameter included in the Initial Address Message (IAM).</p> <p>Currently, when the parameter MDLANumberScreening is set to 1 in the XECfgParm.dat file, screening is done on the redirecting number. This works when screening individual numbers but does not allow block ranges to be screened, as is the case when using DialPlan Screening in the Digit Tree functions.</p> <p>Use an editor such as vi to manually add the *.RedirectingATree parameter to the XECfgParm.dat file in the following file locations and set its value:</p> <p>/opt/CiscoMGC/etc/XECfgParm.dat</p> <p>/opt/CiscoMGC/etc/CONFIG_LIB/new/XECfgParm.dat</p> <p>Valid values:</p> <ul style="list-style-type: none"> • 0—Default. Indicates the Calling Party Number (CGPN) that will be used for A-number screening/analysis via A-digit tree. • 1—Indicates that the Redirecting Number should be used for A-number screening/analysis via A-digit tree if the incoming signaling message contains both the CPN and Redirecting Number or just the Redirecting Number. <p>Note This property is only effective when BLACKLIST is provisioned. If Screening is data filled and this property is set to 1, then Redirecting Number is used for screening. However, if result types other than BLACKLIST/SCREENING are encountered when Redirecting Number is used during A-number Tree Analysis, an alarm RedirectingNbrFail (informational alarm) is generated.</p> |
| *.SelectTermCustGrpId | <p>Applies only to Nailed Solutions. If this parameter is not defined, it defaults to False.</p> <p>If this parameter is set to True and CUSTGRPID of the Originating Leg SigPath is 0000, then you must select CUSTGRPID of the Terminating Leg SigPath.</p> <p>If this parameter is set to False, you should always select CUSTGRPID of the Originating Leg SigPath.</p> <p>Default: False</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------|---|
| *.sipFailover | <p>Specifies whether the Cisco PGW 2200 Softswitch hosts, when connected with a session interrupt protocol (SIP) network, should perform an automatic switchover when a LAN interface fails.</p> <p>Default: false</p> <p>Valid values: true or false</p> |
| *.sipRoutingMode | <p>Defines the routing mode of Cisco PGW 2200 Softswitch, strict router or loose router.</p> <p>Valid Values:</p> <ul style="list-style-type: none"> 0 = Strict Router 1 = Loose Router <p>Default: 0</p> |
| *.sm_meas_baseaddr | <p>Indicates the memory size of the base address.</p> <p>Default: 3400</p> <p>Note Do not change this value.</p> |
| *.stPort | <p>Port number used between peer components or processes.</p> <p>Enter any unused port number (for example, 7000). If your configuration uses a Cisco SLT, enter the port number on the Cisco SLT.</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in a failover configuration, enter a different number for this value in the XECfgParm.dat file on the secondary host (for example, 7001).</p> <p>Note On a new configuration, we recommend that this parameter be set to 0. This value allows the Cisco ITP-L port to be defined using the PEERPORT parameter of the SESSIONSET.</p> <p>Note SESSIONSET reads the port value that is defined. However, if an *.stPort value other than 0 is defined in XECfgParm.dat (for example, *.stPort=7001), the SESSIONSET value gets overridden by the value in XECfgParm.dat.</p> |
| *.SUA.maxSigServices | <p>Defines the maximum number of Signaling Connection Control Part (SCCP) User Application (SUA) signaling services. It also defines the maximum number of SUA routing keys.</p> <p>Value: 256</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-----------------------------|--|
| *.SUA.maxOPCs | <p>Defines the maximum number of SUA OPCs.</p> <p>Value: 64</p> <p>Note Do not change this value.</p> |
| *.SUA.maxRoutesPerOpcApcSsn | <p>Defines the maximum number of SUA routes per OPC, adjacent point code (APC), and subsystem number (SSN) set.</p> <p>Value: 2</p> <p>Note Do not change this value.</p> |
| *.SUA.maxSgp | <p>Defines the maximum number of SUA SS7 signaling gateway processes.</p> <p>Values: 8</p> <p>Note Do not change this value.</p> |
| *.SyscheckpointEnabled | <p>Enables or disables checkpointing.</p> <p>Values:</p> <ul style="list-style-type: none"> false—Disables checkpointing. Calls are not preserved during a switchover, and status messages are not sent to the replicator (default). true—Enables checkpointing. Calls that are in the talking state are preserved and survive a control switchover. All status checkpointing information is sent to the replicator on the active side. <p>Default: false</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in a failover configuration, enter true. If you have a standalone configuration, enter false.</p> |
| *.SysConnectDataAccess | <p>Controls whether data access is enabled or disabled (if the engine attempts to connect to the MMDB or to call screening database at startup).</p> <p>Values:</p> <ul style="list-style-type: none"> true—Connect to MMDB or call screening database. false—Do not connect to MMDB or call screening database. <p>Default: false</p> <p>Note This parameter must be set to true in calling scenarios where Euro-LNP, A Number Screening, or other features requiring real time database access are required. Otherwise, it can remain false for an increase in the available system memory usable for call processing.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------|--|
| *.tablesFile | <p>Location of the database directories.</p> <p>Default: ../etc/tables.dat</p> <p>Note Do not change this value.</p> |
| *.tempDir | <p>Location of the temporary files.</p> <p>Default: /tmp</p> <p>Note Do not change this value.</p> |
| *.tibcoSupport | <p>Determines whether or not the system supports a TIBCO maintenance interface.</p> <p>Default: disable</p> <p>Valid values: enable or disable</p> |
| *.transpathId | <p>Identifies the local Cisco PGW 2200 Softswitch host in a redundant configuration. The IDs must be unique in an active and standby pair.</p> <p>Value: Any integer up to 2 digits.</p> <p>Default (for the active host): 01</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in a failover configuration, the number for each host must be different in the XECfgParm.dat file.</p> |
| *.Virtual_IP_Addr1 | <p>Specifies a virtual IP address for a LAN interface. This IP address must be within the subset of the IP address defined for *.IP_Addr1.</p> <p>Default: 0.0.0.0</p> <p>Valid values: An IP address expressed in dotted decimal notation.</p> |
| *.Virtual_IP_Addr2 | <p>Specifies a virtual IP address for a LAN interface. This IP address must be within the subset of the IP address defined for *.IP_Addr2.</p> <p>Default: 0.0.0.0</p> <p>Valid values: An IP address expressed in dotted decimal notation.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------|--|
| *.VSCNetworkPlacement | <p>Determines Cisco PGW 2200 Softswitch placement (AT or IXC) and bias routing accordingly.</p> <p>Values:</p> <ul style="list-style-type: none"> • Nanp_AT • Nanp_IXC • NULL • 0 <p>Default: NULL</p> <p>Note If you do not set this property, all calls will route according to called number or some other criteria, not Carrier ID.</p> |
| *.CallCutoffTimer | <p>Provides a global system-wide timer, which is started when a call is answered and runs for the pre-configured time. When it expires the call is released in both directions and the call is cleared. This parameter is not dynamically reconfigurable. You must restart your system.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • Hours: 0 (default), 1–48 (using hour as the unit) • Minutes: 0, 1–2880 (using minute as the unit) • Seconds: 0, 1–1728000 (using second as the unit) <p>Default: 0—Disables the timer.</p> <p>Note You can override this value using the first data word of the CALL_CUTOFF_TIMER result type.</p> |
| *.CallCutoffTimerUnits | <p>Defines the unit of measurement used for the global system-wide timer.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • 0 (hours) (default) • 1 (minute) • 2 (seconds) |
| cfgM.recovDbFile | <p>Storage location of the configuration manager recovery information.</p> <p>Default: ../var/cfgMRecovery</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|----------------------------------|--|
| diskmonitor.CdrRmFinished | <p>Specifies the number of days to keep finished CDR files. The default value is 0, which means that if the Cisco BAMS is polling the Cisco PGW 2200 Softswitch, CDR.bin files remain in a user-configurable directory until they are renamed by the Cisco BAMS (using format CDR_<i>timestamp</i>.finished) and/or the disk monitor trims the file from user-configurable directory.</p> <p>Value: 0 or non-zero integer indicates days to delay before being deleted.</p> <p>Default: 0</p> |
| diskmonitor.CfgRmDirs | <p>Specifies the maximum number of configurations that can be stored in the configuration library. This parameter must be manually added to the XECfgParm.dat file to activate the disk monitor enhancement shell script. This feature allows you to manipulate and disable the deletion of configuration directories through XECfgParm.dat. Old configuration directories are removed in reverse order when the indicated limit is reached.</p> <p>Default: 64</p> <p>If the XECfgParm.dat file is not updated, a default value of 64 is used for the number of allowable directories. If a default of 64 is used, the Cisco PGW 2200 Softswitch will maintain up to 64 configurations in its /opt/CiscoMGC/etc/CONFIG_LIB directory.</p> <p>Entering a value of 0 disables monitoring of the number of entries stored in the configuration library. To change the value of this parameter, you may need to add it manually to the XECfgParm.dat file.</p> <p>The deletion of configuration directories can be disabled by setting the diskmonitor.CfgRmDirs parameter to a value less than or equal to 2, or greater than 64.</p> <p>You can also reduce the number of allowable saved configurations by setting the parameter to a value between 3 and 64.</p> <p>Note A default value in the range of 50 to 60 should be used to allow the disk monitor script to work properly when using the MML command prov-sync.</p> |
| diskmonitor.CoreRmDays | <p>Specifies how many days to keep core dump files before disk monitor removes them automatically.</p> <p>Default: 1</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|----------------------------|---|
| diskmonitor.DailyStartTime | Specifies the time that the disk monitor is run each day to remove files that are older than the value set in diskmonitor.MaxKeepDays. The time is in 24-hour format and is based on the time set in the operating system. Default: 04:15 |
| diskmonitor.Limit | Age of the files, in days, that can be deleted when disk trimming is initiated. Default: 7 Note Do not change this value. |
| diskmonitor.MaxKeepDays | Maximum number of days to preserve logged data regardless of the percentage of disk usage. The value of this parameter is checked once daily at the time specified in diskmonitor.DailyStartTime. The default value, 0, disables this function. Default: 0 |
| diskmonitor.OptFileSys | List of optional file systems to monitor. Allows for optional user-configurable file systems to be monitored. This utility monitors the /opt file system for threshold crossing. Using this parameter, you can monitor additional file systems (disk slices) by setting parameter to the preferred directory, such as /tmp, /usr or /var. The messages associated with this parameter are sent to the platform.log file. To retrieve these messages, you must scan the platform.log file for messages using the following format: Filesystem <i>file_system_name</i> has exceeded <i>num</i> percent full. For example: Filesystem /var has exceeded 80 percent full These files are not trimmed by disk monitor. Default: (blank) |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters



| Configuration Parameter | Definition |
|--------------------------|---|
| diskmonitor.PreserveLogs | <p>Specifies, along with diskmonitor.SoftLimit, whether platform log data should be preserved or deleted once the disk usage percentage set in diskmonitor.Threshold is reached.</p> <p>Note Alarm, CDR, and measurement log (under /var/spool) files are not affected by the settings of this parameter.</p> <p>To ensure that logged data can be deleted, this parameter is set to false. The setting for diskmonitor.SoftLimit has no impact.</p> <p>To ensure that logged data is preserved, this parameter is set to true, and diskmonitor.SoftLimit is set to false.</p> <p>Default: False</p> <p> Caution If this function is activated and the DISK alarm is raised, you must delete the non-required files to bring the disk utilization below the threshold. Otherwise, you run the risk of filling the disk and stopping the Cisco PGW 2200 Softswitch.</p> |
| diskmonitor.SoftLimit | <p>Specifies the action to be taken once the number of days threshold set in the diskmonitor.Limit parameter is reached.</p> <p>Works with diskmonitor.Threshold to prevent the disk from filling up and stopping the Cisco PGW 2200 Softswitch.</p> <p>If this parameter is set to true, disk monitor deletes files day by day until the utilization level drops below the threshold.</p> <p>If this parameter is set to false, disk monitor closes and the system generates a DISK alarm. The files can then be deleted manually.</p> <p>This parameter also works with diskmonitor.PreserveLogs to specify whether logs are preserved when the disk usage percentage set in diskmonitor.Threshold is reached. Refer to the description of the diskmonitor.PreserveLogs parameter for more information.</p> <p>Default: False</p> <p> Caution If this parameter is set to false and the DISK alarm is raised, you must delete the non-required files to bring the disk utilization below the threshold. Otherwise, you run the risk of filling the disk and stopping the Cisco PGW 2200 Softswitch.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|----------------------------------|---|
| diskmonitor.Threshold | <p>Erases old log files to free disk space. The threshold is the percent the disk is full before trimming starts. Only /var/log and /var/spool are monitored by default; the disk monitor function is local to these two directories by default.</p> <p>Disk related alarms are generated only when disk monitor is running and the disk cannot be trimmed back to the threshold level according to the parameter settings in XECfgParm.dat. If the disk is 86% full and disk monitor successfully trims back to 80%, no alarm is generated.</p> <p>Value: Any integer from 1 to 100 (percent of threshold). Default: 80</p> |
| cdrDmpr.callDetail | <p>Specifies that CDR files may be automatically converted from binary format to ASCII, comma-delimited format.</p> <p>Default: /opt/CiscoMGC/local/cdbscript.sh</p> <p>Optional: /opt/CiscoMGC/bin/converter (if binary CDR files need to be converted to ASCII)</p> <p>Note The default CDR file format has changed from an ASCII format in Release 4 to a binary format in Release 7. The ASCII file has a .csv extension.</p> <p>For more information on generating and viewing CDR files, see the <i>Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide</i>.</p> |
| dmpr.openCDR | <p>Specifies whether the standard data dumper should write out CDR files.</p> <p>Values:</p> <ul style="list-style-type: none"> true—Standard data dumper opens a CDR file and log the call data blocks (CDB). false—Standard data dumper does not open a CDR file and does not log CDBs. <p>Default: true</p> <p>Note The default format for CDR files has been changed since release 4 from an ASCII format to a binary format. Use the dmpr.callDetail parameter to convert the files to an ASCII format, if necessary.</p> |
| engine.AuditTimerInterval | <p>Time interval in milliseconds between two batches of audits.</p> <p>Value: Any positive integer.</p> <p>Default: 500</p> <p>Note This is a platform-specific value and depends on your system installation. No auditing is available for nailed trunks.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|---|---|
| engine.CallLimitingControl (added in Release 9.6(1)) | <p>Allows enabling or disabling the call limiting capability on the Cisco PGW 2200 Softswitch.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • 0—Call limiting off (default) • 1—Call limiting on |
| engine.CALL_MEM_BLOCK_SIZE | <p>Block of memory allocated per call.</p> <p>Used by MDL.</p> <p>Set automatically based on the type of Cisco PGW 2200 Softswitch selected in engine.SysVirtualSwitch. Any attempt to modify this value is overwritten.</p> |
| engine.CALL_MEM_CHUNK_SIZE | <p>Memory chunks allocated from the block of memory designated with engine.CALL_MEM_BLOCK_SIZE.</p> <p>Set automatically based on the type of Cisco PGW 2200 Softswitch selected in engine.SysVirtualSwitch. Any attempt to modify this value is overwritten.</p> |
| engine.CDRencodingFormat | <p>Specifies the CDR file encoding format.</p> <p>Values:</p> <ul style="list-style-type: none"> • AnsiCDB—North American • ItuCDB—European • CustCDB—Custom <p>Default: AnsiCDB</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|---------------------------|--|
| engine.CDRmessageTypes | <p>To specify the Call Detail Blocks (CDBs are the accounting records written at various points in a call) that are generated during a call, enter one of the following sets of values (each number represents a point in a call):</p> <ul style="list-style-type: none"> 1010, 1020, 1030, 1040, 1050, 1060, 1070, 1080—These are considered the “event-based” set of values. Use this event-based list when you want to receive all CDR records at predefined points in the call. Although each of these CDBs can be specified independently, Cisco suggests that you use the event-based set as a package of CDBs for full accounting purposes. <p>Note The event-based setting is required when operating the Cisco PGW 2200 Softswitch in conjunction with the BAMS adjunct.</p> <ul style="list-style-type: none"> 1060, 1110—Use this value if you want end-of-call summary-type records only. 1071—Use this set of values for BAMS measurements. <p>Refer to the chapter “Detailed CDB Description” in the <i>Cisco PGW 2200 Softswitch Software Release 9 Billing Interface Guide</i> for details on each CDB.</p> |
| engine.CDRtimeStamp | <p>Specifies the time stamp unit in seconds or milliseconds.</p> <p>To specify the CDR file time-stamp unit, enter one of the following values:</p> <ul style="list-style-type: none"> S—Seconds (default). M—Milliseconds. Use this parameter if your configuration uses TCAP or if you want the millisecond granularity in all of your CDR records. <p>Note The M setting is mandatory when operating the Cisco PGW 2200 Softswitch in conjunction with the BAMS adjunct.</p> |
| engine.CircuitReservation | <p>Enables or disables the circuit reservation feature.</p> <p>Values: True, False</p> <p>Default: False</p> |
| engine.CMMdlFile | <p>Location of call processing libraries.</p> <p>Default: ../lib/cc</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--------------------------------|---|
| engine.RelINAPCallsAfterSwOver | <p>Defines the treatment of INAP calls in answer state after platform switchover. This parameter is used for calls that require INAP interaction even after the answer state. Currently, this parameter is used only for Prepaid INAP calls.</p> <p>Values:</p> <ul style="list-style-type: none"> True (Release all the INAP calls after switchover) False (Do not release INAP calls after switchover) <p>Default: True</p> <p>Note If the value of this parameter is set to true, the Cisco PGW 2200 Softswitch releases all calls immediately. If the value is set to False, the Cisco PGW 2200 Softswitch does not take any action for the INAP prepaid calls and these calls are treated like any normal POTS call.</p> |
| engine.LCMMdlFile | <p>Location of call processing libraries.</p> <p>Default: ../lib/lcm</p> <p>Note Do not change this value.</p> |
| engine.MaxAuditCics | <p>Number of circuit identification codes (CICs) that can be audited at a specified interval.</p> <p>Values:</p> <ul style="list-style-type: none"> 24—North America (T1) 32—Europe (E1) <p>Default: 32</p> <p>Note Do not change this value.</p> |
| engine.mdoDir | <p>Location of call processing libraries.</p> <p>Default: ../lib/</p> <p>Note Do not change this value.</p> |
| engine.SendHardwareBlock | <p>To enable the Cisco PGW 2200 Softswitch to send hardware-oriented blocking messages for any blocks that originate from the media gateways:</p> <ul style="list-style-type: none"> true—Sends hardware-oriented blocking messages for any blocks that originate from the media gateways. false—Sends only maintenance-oriented blocking messages for all blocking cases (default). <p>Note The parameter is automatically added to the XECfgParm.dat file during the patch installation.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--------------------------------|--|
| engine.ShortDurationCallPeriod | <p>Allows you to specify the period used to determine a short duration call. Calls with a duration less than the specified value are recorded as a short duration call in the CDR.</p> <p>Default: 0</p> <p>Valid values are: 0–30. A setting of 0 indicates that this parameter is disabled. Short duration calls are not recorded in the CDR when this parameter is disabled.</p> |
| engine.StartUpAuditEnabled | <p>Audit is automatically invoked at Cisco PGW 2200 Softswitch startup.</p> <p>When the value is set to true the Cisco PGW 2200 Softswitch automatically starts audit when it comes up as the active host. This does not apply to the standby host.</p> <p>Default: false</p> |
| engine.SysCdrCollection | <p>Designates the format of CDRs.</p> <p>Values:</p> <ul style="list-style-type: none"> • true—Invalid for Release 7.4 and above. • false—Generates binary format CDRs (default) <p>Default: false</p> <p>Note Do not change this value. Setting this to a value of true for Release 7.4 and higher is not valid and may have deleterious effects on the system.</p> |
| engine.SysCLIval | <p>Enables or disables Calling Line Identity (CLI) validation processing on calls.</p> <p>Values:</p> <ul style="list-style-type: none"> • true— Enables CLI validation • false—Disables CLI validation <p>Default: false</p> |
| engine.SysGeneratedCode | <p>Determines whether compiled or interpreted code is used.</p> <p>Values:</p> <ul style="list-style-type: none"> • true—System uses compiled code. • false—System uses interpreted code. <p>Default: true</p> <p>Note Compiled code runs faster than interpreted code. Typically, this value should be true. If your configuration uses multiple CPUs, this value must be true.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|----------------------------|--|
| engine.SysGSMTimerInterval | <p>Allows group service messages (GSMs—used to advertise the state of circuits) to be sent at a periodic rate from the SS7 side of the network to the IP side of the network.</p> <p>Valid values: 1000–30000</p> <p>Default for up to Release 9.2(2): 30000</p> <p>Default for Release 9.3(1) and later: 10000</p> |
| engine.SysGRSBlockSize | <p>Used for flow control of all automatically generated GRS, CGB, and CGU messages which are generated by the Cisco PGW 2200 Softswitch during run time. Typically produced due to propagation of service state changes such as MGCP endpoints changing availability. Specifies the interval, in milliseconds, between blocks of GRS parameters when the engine.SysGRSBlockSize parameter is used. The timer interval runs from the start of sending the first GRS message in each block to the first message in the next block.</p> <p>This parameter operates independently for each SS7 route (each OPC/DPC pair).</p> <p>Value: Any integer</p> <p>Default: 0</p> <p>Example: 1000</p> |
| engine.SysMaxOverlap | <p>Maximum number of digits required before a call is considered complete; used in overlap signaling.</p> <p>Default: 28</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|------------------------------|---|
| engine.SysMdlMemoryReduction | <p>Controls use of MDL memory reductions.</p> <p>Prior to Release 9.4(1):values:</p> <ul style="list-style-type: none"> • 0—MDL memory reductions not used (maximum performance) • 1—MDL memory reduction improvements used <p>Default: 0</p> <p>Note For performance-critical configurations, use the default value. For memory-critical configurations, set this value to 1.</p> <p>Note Setting this parameter to 1 enables the memory reduction algorithm which increases the number of concurrent (sustained) calls possible with the platform at the expense of call throughput performance.</p> <p>Note During the startup of the Cisco PGW 2200 Softswitch software, this parameter will be set automatically to tune the system for optimal performance.</p> <p>Note Release 9.4(1) and later: This parameter is set automatically based on the type of Cisco MGC selected in engine.SysVirtualSwitch. Any attempt to modify this value is overwritten.</p> |
| engine.SysMinOverlap | <p>Minimum number of digits required before a call is considered valid; used in overlap signaling.</p> <p>Default: 0</p> <p>Note Do not change this value.</p> |
| engine.SysPropagateChanAvail | <p>In a classic signaling controller configuration, propagates service messages between channels in the event of a channel failure.</p> <p>Values:</p> <ul style="list-style-type: none"> • true—Messages propagated • false—Messages not propagated (default) <p>Note Do not change this value.</p> |
| engine.SysSGCPRetryCount | <p>Maximum number of simple gateway control protocol (SGCP) retry messages after a failure.</p> <p>Default: 3</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|----------------------------------|--|
| engine.SysSGCPREtryTimerInterval | <p>The interval between SGCP message transmissions, in milliseconds.</p> <p>Default: 1000</p> <p>Note Do not change this value.</p> |
| engine.SysTraceLevel | <p>A debugging tool that allows for different levels of engine tracing.</p> <p>Default: 3</p> <p>Note Do not change this value.</p> |
| engine.SysVirtualSwitch | <p>Indicates whether the Cisco PGW 2200 Softswitch host functions as a signaling controller or a virtual switch controller.</p> <p>Values:</p> <ul style="list-style-type: none"> • 0—Signaling controller (nailed trunks, no auditing is initiated) • 1—Virtual switch controller (switched trunks) <p>Default: 0</p> <p>Note During the startup of the Cisco PGW 2200 Softswitch software, this parameter is be set automatically to tune the system for optimal performance.</p> <p>Note For Release 9.4(1) and later, the values of the parameters listed below are automatically set based on the Cisco MGC type you select, to maximize performance for that configuration. Any attempt to change the values of these parameters is overwritten.</p> <p>engine.SysMdlMemoryReduction engine.CALL_MEM_BLOCK_SIZE engine.CALL_MEM_CHUNK_SIZE *.CPUTimerInterval *.numberOfThreads</p> |
| engine.VersionTimeoutValue | <p>Defines the timeout interval in number of milliseconds for version messages sent to the media gateway. This delay determines how long the Cisco PGW 2200 Softswitch waits for a response from the media gateway during the exchange of features prior to the audit.</p> <p>Value: Any integer.</p> <p>Default: 10000</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|------------------------------------|--|
| foverd.abswitchPort | <p>Port used for communication with the A/B switch.</p> <p>Value: /dev/term/x</p> <p>Example: /dev/term/b</p> <p>Note If your configuration does not use an A/B switch, use the default value (/dev/null).</p> |
| foverd.abswitchTestInterval | <p>Time interval in milliseconds between attempts to verify that an A/B switch is present.</p> <p>Default: 30000</p> <p>Note This parameter applies only if your configuration uses an A/B switch.</p> |
| foverd.ackTimeout | <p>Maximum time, in milliseconds, that the failover daemon will wait for an ACK or NOACK message to be received from the peer failover daemon. For each message the failover daemon sends, the peer failover daemon sends an ACK or NOACK message to indicate that the peer is still functioning.</p> <p>Default: 1000 milliseconds (1 second).</p> <p>Note You can change the default value to a value more appropriate for your system installation.</p> |
| foverd.commRetryInterval | <p>Time interval in milliseconds between attempts to open a connection.</p> <p>Connection types include:</p> <ul style="list-style-type: none"> • Connection to the peer failover daemon • Connection to the A/B switch • Connection to the ARU <p>Default: 30000 milliseconds (30 seconds).</p> <p>Note You can change the default value to a value more suited to your system installation.</p> |
| foverd.conn1Type | <p>Sets the connection type for connection number 1.</p> <p>Values:</p> <ul style="list-style-type: none"> • Serial • Socket <p>Note Typically, set this value to socket.</p> |
| foverd.conn2Type | <p>Sets the connection type for connection number 2.</p> <p>Values:</p> <ul style="list-style-type: none"> • Serial • Socket <p>Note Typically, set this value to socket.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|---------------------------------|--|
| foverd.conn3Addr | <p>Specifies the address of the peer system.</p> <p>Example: /dev/term/b</p> <p>If your configuration does not use connection number 3, enter /dev/null (default).</p> <p>Note If your configuration uses an 8-port connector as a serial connection for failover, you must modify the read-write permissions for the connection. For more information, see the <i>Release Notes for the Cisco Cisco PGW 2200 Softswitch Release 9.8</i>.</p> |
| foverd.conn3Type | <p>Sets the connection type for connection number 3.</p> <p>Values:</p> <ul style="list-style-type: none"> serial socket <p>Note Typically, set this value to serial.</p> |
| foverd.delayTimeout | <p>Maximum time in milliseconds that the failover daemon can delay at startup before sending messages to its peer. This is also the delay offset that is added when the two failover daemons become too closely synchronized.</p> <p>Default: 1000 milliseconds (1 second)</p> |
| foverd.forceShutTimeout | <p>Maximum time in milliseconds that the failover daemon waits before forcefully shutting down the platform.</p> <p>Default: 1000 milliseconds (1 second)</p> |
| foverd.graceShutTimeout | <p>Maximum time in milliseconds that the failover daemon waits before gracefully shutting down the process manager, which shuts down the processes it controls.</p> <p>Default: 6000 milliseconds (6 seconds)</p> |
| foverd.heartbeatInterval | <p>Maximum time in milliseconds between heartbeat messages from the peer failover daemon. This interval defines the frequency that the failover daemon exchanges heartbeat messages with its peer.</p> <p>Default: 1000 milliseconds (1 second).</p> |
| foverd.ipLocalPortA | <p>Port number used for IP communication.</p> <p>Default: 0</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in a failover configuration, enter this value for the foverd.ipPeerPortA field in the XECfgParm.dat file on the secondary host.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|---------------------------------|--|
| foverd.ipLocalPortB | <p>Port number used for IP communication.</p> <p>Default: 0</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in a fault-tolerant configuration, enter this value for the foverd.ipPeerPortB field in the XECfgParm.dat file on the secondary host.</p> |
| foverd.ipPeerPortA | <p>Port number used for IP communication.</p> <p>Default: 0</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in a fault-tolerant configuration, enter this value for the foverd.ipLocalPortA field in the XECfgParm.dat file on the secondary host.</p> |
| foverd.ipPeerPortB | <p>Port number used for IP communication.</p> <p>Default: 0</p> <p>Note If you have two Cisco PGW 2200 Softswitch hosts in a fault-tolerant configuration, enter this value for the foverd.ipLocalPortB field in the XECfgParm.dat file on the secondary host.</p> |
| foverd.peerCommTimeout | <p>Maximum time in milliseconds without communication with the remote system. At the expiration of this period, the remote system is assumed to be unavailable and an automatic switchover is performed.</p> <p>Default: 3000 milliseconds (3 seconds)</p> <p>Note A time out value that is too small can cause a false failover, resulting in possible service interruptions.</p> |
| foverd.statusRptInterval | <p>Time interval in milliseconds that governs the frequency with which the failover daemon logs statistics on the different connections and any failures it encountered exchanging messages with its peer. Logs are created in the log directory.</p> <p>Default: 600000 milliseconds (10 minutes)</p> |
| foverd.transitionTimeout | <p>Maximum time in milliseconds allowed for transitions between different states of the failover daemon. This timeout determines how long the system waits for a graceful transition to a new state before forcing the transition. If a timeout occurs, the system is restarted.</p> <p>Default: 10000 milliseconds (10 seconds).</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|----------------------------|--|
| GWNetworkContinuity | <p>For network continuity test on VISM.</p> <p>Valid values:</p> <p>1—Network continuity is present/requested.</p> <p>0—Network continuity is present/requested.</p> <p>Default: 0 (Currently this property only applies to VISM GWs.)</p> <p>Note This property should have value = 1 when the VISM GW property is switched on.</p> |
| ioChanCtl.DPNSSTestFrames | <p>Enables DPNSS to generate test frames.</p> <p>Values:</p> <ul style="list-style-type: none"> true—If DPNSS is running, test frames are generated. false—Test frames are not generated. <p>Default: true</p> <p>Note Do not change this value.</p> |
| ioChanMgr.alarmTimer | This parameter is obsolete and should be set to 0. |
| ioChanMgr.evtTimer | <p>Frequency, in milliseconds, at which the queue is scanned for messages.</p> <p>Default: 100</p> <p>Note Do not change this value.</p> |
| ioChanMgr.hbTimer | This parameter is reserved for future use. |
| ioChanMgr.IPCsendThreshold | <p>Specifies the maximum number of RSIPs that can be sent from the queue during a period defined by the IPCTimer XECfgParam.dat parameter. When this parameter is left at its default value (0), the system uses a base value. You can modify the value if a problem occurs.</p> <p>Valid values: Any integer</p> <p>Default value: 0</p> |
| ioChanMgr.resumeAckTimer | <p>Amount of time the Cisco PGW 2200 Softswitch waits to get a MGMT_RESUME_ACK_RSP message from a gateway, after sending a MGMT_RESUME_REQ message fro a BSM session set.</p> <p>Values are 1 or 2 seconds.</p> <p>Default: 1</p> |
| ioChanMgr.sendThreshold | <p>Maximum number of events sent from the queue at one time.</p> <p>Default: 10</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--------------------------------|---|
| ioChanMgr.sessionPauseTimer | <p>Amount of time the Cisco PGW 2200 Softswitch waits for a BSM session set to recover from failure before declaring the session set failure.</p> <p>Values: 1–10 seconds.</p> <p>Default: 8</p> |
| ioChanMgr.statDiscardThreshold | <p>Size of the control queue that triggers discarding of all queued stat events.</p> <p>Default: 40</p> <p>Note Do not change this value.</p> |
| ioChanMgr.statTimer | <p>Frequency, in milliseconds, at which measurements are collected in the Transpath Input/Output System (TIOS).</p> <p>Default: 30000 milliseconds</p> <p>Note Do not change this value.</p> |
| ioChanMgr.trace | <p>Creates unit test tracing of line and channel state machines. Generates a considerable amount of information to the log. Set to a value only when you are debugging a particular problem with line or channel service state problems.</p> <p>Values:</p> <ul style="list-style-type: none"> • 0 x 0—Default • 0 x 1—Trace <p>Note Do not change this value.</p> |
| localMID | <p>This property is included in the H.248 message from Cisco PGW 2200 Softswitch to gateway. It can be an IP address in the format of X.X.X.X, or it can be a domain name.</p> <p>Values: String (up to 127 characters)</p> <p>Default: 0.0.0.0</p> <p>Note The MgcHeaderAddrType property contains related information.</p> |
| logger.daemonAddr | <p>Specifies the name of the local socket used by the log server daemon. The daemon listens for connections on this address, and client programs attempt to connect to the daemon at this address.</p> <p>Default: ../var/log/lsd_addr</p> <p>Note If this setting is missing from the XECfgParm.dat file, the log server daemon does not run.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-----------------------------|---|
| logger.fileRotateInterval | <p>Triggers a file rotation based on the time elapsed since the previous rotation.</p> <p>Default: 1440 minutes (24 hours)</p> <p>Note This timer is reset after any rotation occurs, regardless of the cause or trigger of the rotation.</p> |
| logger.fileRotateSize | <p>Triggers a file rotation based on the size of the active file. A file rotation triggered by this parameter also resets the logger.fileRotateInterval timer.</p> <p>Default: 100MB</p> <p>Note The file size can grow larger than this parameter indicates due to the verbosity of the logging levels currently in effect.</p> |
| logger.numThreads | <p>Determines whether the PXE logger should run in a separate thread from the rest of the application. A value of 0 runs the logger synchronously with the application; a value of 1 runs the logger in a separate thread.</p> <p>Value: 0/1 (Values less than 0 get reset to 0; values greater than 1 get reset to 1.)</p> <p>Default: 0</p> |
| maximumActionsInTransaction | <p>Sets the maximum number of actions in one H.248 Transaction.</p> <p>Value: Any integer</p> <p>Default: 64</p> |
| maxNumH248Links | <p>Defines the maximum number of H.248 links that the Cisco PGW 2200 Softswitch supports.</p> <p>Values: Any integer</p> <p>Default: 1000</p> |
| MDLNumberScreening | <p>Invokes the standard A-number screening on the number in the calling number parameter, regardless of whether the call is redirected or not.</p> <p>Setting the MDLNumberScreening parameter to its default value 0 (zero) in the XECfgParm.dat file defaults all screening actions exclusively to the original calling party number (A-number). No screening is done on the number in the redirecting number parameter.</p> <p>Default value: 0 (zero)</p> <p>Note To invoke the redirecting number screening feature, set the value to 1 in the XEConfigParm.dat file during initial Cisco PGW 2200 Softswitch software configuration.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------|--|
| MgcHeaderAddrType | <p>Sets the Cisco PGW 2200 Softswitch H.248 local MID address type.</p> <p>Values:</p> <ul style="list-style-type: none"> 1 = IP address 2 = Domain name <p>Default: 1</p> <p>The localMID property contains related information.</p> |
| MML.chg-cfg | <p>Timeout value for the chg-cfg MML command in milliseconds; overrides MML.timeout.</p> <p>Default: 10000 milliseconds</p> <p>Note Do not change this value. This MML command is obsolete.</p> |
| MML.snd | <p>Timeout value for the snd MML command in milliseconds; overrides MML.timeout.</p> <p>Default: 600000 milliseconds</p> <p>Note Do not change this value.</p> |
| MML.startPM | <p>Timeout value for the startPM MML command in milliseconds; overrides MML.timeout.</p> <p>Default: /etc/init.d/CiscoMGC start</p> <p>Note Do not change this value.</p> |
| MML.stopPM | <p>Timeout value for the stopPM MML command in milliseconds; overrides MML.timeout.</p> <p>Default: /etc/init.d/CiscoMGC stop</p> <p>Note Do not change this value.</p> |
| MML.timeout | <p>Timeout for MML commands, in milliseconds.</p> <p>Default: 10000 milliseconds</p> <p>Note Do not change this value.</p> |
| MML.vld-cic | <p>Timeout value for the vld-cic MML command in milliseconds; overrides MML.timeout.</p> <p>Default: 25000 milliseconds</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-------------------------------|---|
| pom.dataSync | <p>Indicates that the Provisioning Object Manager (POM) should synchronize the provisioning data at startup.</p> <p>Values:</p> <ul style="list-style-type: none"> true—POM is enabled, data is synchronized. false—POM is disabled, no data synchronization (default). <p>Note If you have two Cisco PGW 2200 Softswitch hosts in a failover configuration, set this value to true. If you have a standalone Cisco PGW 2200 Softswitch, set this value to false.</p> <p>Note When the initial Cisco PGW 2200 Softswitch configuration on the active host is deployed, you must change the pom.dataSync parameter to true in the XECfgParm.dat file on the standby host. After setting this parameter to true, you can start the Cisco PGW 2200 Softswitch software on the standby host. As the Cisco PGW 2200 Softswitch software comes up, the data on the standby host is synchronized with the data on the active host and the active host goes into the standby state.</p> <p>To accommodate failover conditions where the current active host can become the standby host, you must also set the pom.dataSync parameter to true on the current active host.</p> <p>Note If you are trying to maintain calls during an upgrade of a redundant system and you want to preserve your configuration, verify that the pom.dataSync parameter is set to false in /opt/CiscoMGC/etc/XECfgParm.dat.</p> |
| pom.port | <p>Indicates the port number the POM uses to communicate with its peer in a fault-tolerant configuration.</p> <p>Value: Any integer from 4001 to 4050</p> <p>Default: 4001 or default</p> <p>Note This is a platform-specific value and depends on your system installation. You should only modify this value if the default port (4001) is being used by another process or application.</p> |
| procM.almDwellInterval | <p>Seconds that the process manager must wait before clearing an alarm.</p> <p>Default: 15 seconds</p> <p>Note Do not change this value.</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|------------------------------|--|
| procM.logDBFile | Specifies the location of the log level storage. Default: ../var/procMLogTable |
| procM.minCheckHealthInterval | Seconds at which a process can generate heartbeats. Default: 10 seconds Note Do not change this value. |
| procM.minCheckHealthTimeout | Seconds at which a timeout can occur. Default: 20 seconds Note Do not change this value. |
| procM.minKillGracePeriod | Seconds that the process manager must wait before killing a process after a heartbeat timeout. Default: 5 seconds Note Do not change this value. |
| procM.recovDbFile | Storage location of the process manager persistent information. Default: ../var/procMRecovery Note Do not change this value. |
| procM.servFmt | Format of the process manager temporary files. Default: PM_%d_%d_input Note Do not change this value. |
| procM.servicesDir | Location of the process manager temporary files. Default: ../var Note Do not change this value. |
| procMprocHealthDfltAlmCat | This parameter is no longer used. |
| product.time | Software time stamp. Note Do not change this value. |
| product.vendor | Software vendor name. Note Do not change this value. |
| product.version | Software release version number. Note Do not change this value. |
| RadiusAccounting.output | Enables the RADIUS server feature. Default: Off |
| RadiusAccounting.numberPort | The number of local port to communicate with RADIUS server. Value: Any integer from 10 to 99. Default: 20 |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--------------------------------|--|
| RadiusAccounting.smSize | The size of shared memory in MB. Value: Any integer from 1 to 199. Default: 30 |
| replicator.portCommChannelRecv | Communication port for the replicator. Default: 2974 Note Do not change this value. |
| replicator.portCommChannelSend | Communication port for the replicator. Default: 2972 Note Do not change this value. |
| replicator.portDataChannelRecv | Communication port for the replicator. Default: 2970 Note Do not change this value. |
| replicator.portDataChannelSend | Communication port for the replicator. Default: 2968 Note Do not change this value. |
| replicator.reconnectInterval | Defines the reconnect interval in number of seconds for the replicator during a switchover. Value: Any integer Default: 15 seconds Note Set this value to 0 for a standalone Cisco PGW 2200 Softswitch. For geographically separated Cisco PGW 2200 Softswitch pairs (Geographic Separation of Active and Standby Cisco PGW 2200 Softswitch Hosts), the following replicator timer values are recommended: <ul style="list-style-type: none"> On one Cisco PGW 2200 Softswitch, replicator.reconnectInterval—15 seconds On the other Cisco PGW 2200 Softswitch, replicator.reconnectInterval—20 seconds If the timer settings are the same on both Cisco PGW 2200 Softswitches, the additional latency between the separated Cisco PGW 2200 Softswitches may cause a problem in which the replicator links are continually reconnecting and then immediately disconnecting. The timer change prevents this problem. |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--|---|
| SIP.Conn_Idle_Period | <p>Defines the length of time (in seconds) that a TCP connection can remain idle before the Cisco PGW 2200 Softswitch closes the connection. A value of 0 means that the Cisco PGW 2200 Softswitch does not close idle TCP connections.</p> <p>Value: Integer</p> <p>Default: 43200</p> <p>Note The Cisco PGW 2200 Softswitch can reuse existing TCP connections.</p> |
| SIP.ConnLocalMsgQueueSize | <p>Defines the maximum size of the Cisco PGW 2200 Softswitch's outgoing message queue.</p> <p>Value: Integer</p> <p>Default: 1500</p> <p>Note The SIP.ConnLocalMsgQueueSize value is dependent on Cisco PGW 2200 Softswitch's hardware and network environment.</p> |
| SIP.dns_query_timer (Added in Release 9.8(1)) | <p>The amount of time in seconds before a Cisco PGW 2200 Softswitch DNS NAPTR query times out.</p> <p>Valid values: 1–30</p> <p>Default: 5</p> <p>Note Do not add this property to the Xecfgparm.dat file unless you need to modify the default value. If the parameter is not present in the Xecfgparm.dat file, the Cisco PGW 2200 Softswitch uses the default value. We recommend that you contact Cisco support before modifying this property.</p> <p>Note If the DNS NAPTR query times out, the Cisco PGW 2200 Softswitch sends a UDP SRV query, TCP SRV query, and an A query simultaneously to determine the IP address and port number of the destination host. The Cisco PGW 2200 Softswitch processes the query results in the following order:</p> <ol style="list-style-type: none"> 1. UDP SRV query 2. TCP SRV query 3. A query |
| SIP.MaxConnection | <p>Defines the maximum number of incoming and outgoing TCP connections that the Cisco PGW 2200 Softswitch can support simultaneously.</p> <p>Value: 1-1999</p> <p>Default: 50</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|--|--|
| SIP.naptr_record_locate (Added in Release 9.8(1)) | <p>Specifies the type of query the Cisco PGW 2200 Softswitch uses to determine the preferred transport protocol of a remote proxy. The Cisco PGW 2200 Softswitch uses the query result for outgoing SIP trunk groups with the siptransportmode property set to Dynamic.</p> <p>Valid values:</p> <ul style="list-style-type: none"> 0 = The Cisco PGW 2200 Softswitch uses UDP transport and a UDP SRV query to determine the remote IP address. 1 = The Cisco PGW 2200 Softswitch uses a DNS NAPTR query to determine the preferred transport protocol and a DNS SRV query to determine the remote IP address. <p>Default: 1</p> |
| SIP.transaction_based_dns_query (Added in Release 9.8(1)) | <p>Specifies when the Cisco PGW 2200 Softswitch sends DNS requests for transport protocol information.</p> <p>Note Do not add this property to the Xecfgparm.dat file unless you need to modify the default value. If the parameter is not present in the Xecfgparm.dat file, the Cisco PGW 2200 Softswitch uses the default value. We recommend that you contact Cisco support before modifying this property.</p> <p>Valid values:</p> <ul style="list-style-type: none"> 0 = The Cisco PGW 2200 Softswitch uses DNS NAPTR and DNS SRV queries for the first SIP message in a call dialog only. The Cisco PGW 2200 Softswitch uses a DNS A query for mid-call SIP messages. This setting provides backwards compatibility for Release 9.7. 1 = The Cisco PGW 2200 Softswitch uses DNS NAPTR and DNS SRV queries for all SIP messages. This setting provides RFC 3263 compatibility. <p>Default: 0</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|---|---|
| SIP.TransportProtocol (Obsolete in Release 9.8(1), used for software migration only) | <p>Defines the transport protocol used to complete calls. The Cisco PGW 2200 Softswitch can only set up new calls using one protocol at a time.</p> <p>Values:</p> <ul style="list-style-type: none"> TCP UDP <p>Default: UDP</p> <p>Note If you modify the SIP.TransportProtocol variable, the Cisco PGW 2200 Softswitch maintains active calls using both TCP and UDP.</p> <p>Note If you modify the SIP.TransportProtocol variable and the user transfers an active call that is using the previous transport protocol, the Cisco PGW 2200 Softswitch sends an INVITE using the new transport protocol.</p> <p>Note Cisco PGW 2200 Softswitch performance in TCP mode can be up to 5% less than performance in UDP mode due to the additional processing needed to maintain TCP connections.</p> <p>Note TCP transport for SIP Phase II (Release 9.8(1)) eliminates the SIP.TransportProtocol that was introduced in TCP Transport for SIP Phase I (Release 9.7(3)) and replaces it with the siptransportmode trunk group property.</p> |
| sipModeSelectionControl | <p>Provides improved mid-call and redirection services for SIP-to-SIP calls.</p> <p>Values:</p> <ul style="list-style-type: none"> 1—Optional mode: Processes SIP-to-SIP calls using a Back to Back User Agent (B2BUA). You can override Optional mode by selecting Fixed Proxy mode in the dial plan. 2— Fixed Proxy mode: The Cisco PGW 2200 Softswitch processes all SIP-to-SIP calls in proxy mode. <p>Default: 2</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|---|--|
| SipToIsupInterworkingInd | <p>Only applicable with SIP to ISUP (or ISUP to SIP) calls.</p> <p>When the Cisco PGW 2200 Softswitch receives a SIP message with encapsulated ISUP (SIP-T, SIP-GTD), it sets the FCI/BCI parameter in the generated ISUP message so that all interworking-related bits have the same values as their counterparts in the encapsulated ISUP.</p> <p>If usable encapsulated ISUP is not present in the SIP message, the Cisco PGW 2200 Softswitch sets the Interworking Indicator bit of the FCI/BCI parameter to <i>no interworking</i>; the ISDN User Part Indicator to <i>ISUP used all the way</i> and the Originating Access indicator to <i>Originating access non-ISDN</i>.</p> <p>Service providers can set the Cisco PGW 2200 Softswitch property SipToIsupInterworkingInd to 1, which signals in the FCI/BCI parameter in the generated ISUP message that <i>interworking has been encountered</i> and <i>ISUP is not used all the way</i> when encapsulated ISUP is not present in SIP message.</p> <p>Values:</p> <ul style="list-style-type: none"> • 0—No interworking encountered • 1—Interworking encountered <p>Default Value: 0</p> <p>Note If the property is absent from the XECfgParm.dat file, Cisco PGW 2200 Softswitch assumes a default value of 0.</p> <p>Protocol Family: Applicable to all ANSI, Q.761 and Q.767 ISUP variants.</p> |
| SIP.udp2tcp_byte_xover (Added in Release 9.8(1)) | <p>Determines the SIP message size (in bytes) above which the Cisco PGW 2200 Softswitch switches to TCP transport. This property applies to outgoing SIP traffic only.</p> <p>Valid values: Integer</p> <ul style="list-style-type: none"> • 0 = The Cisco PGW 2200 Softswitch does not switch from UDP to TCP regardless of the SIP message size. • 1–10000 = The Cisco PGW 2200 Softswitch switches to TCP transport for messages above the specified size (in bytes). <p>Note This property overrides the siptransportmode parameter.</p> <p>Default: 0</p> |

Table A-1 Cisco PGW 2200 Softswitch 9.x XECfgParm.dat File Configuration Parameters

| Configuration Parameter | Definition |
|-----------------------------------|--|
| TCAP.avgInvokePerDialog | Sets the average number of Invokes for a TCAP dialog. A single dialog does not necessarily correspond to a single Invoke. The number of Invokes depends on the call flow for the TCAP dialog. Values: 1-10 Default: 1 |
| TCAP.maxSsnNum | Defines the maximum number of local subsystem numbers allowed by the Cisco PGW 2200 Softswitch for the entire TCAP IOCC subsystem. Value: Any integer from 1 to 10. Default: 10 |
| XE.CallNumberToWriteIntoTracefile | Defines how many call buffers the Cisco PGW 2200 Softswitch records in the trace file. Values: Any integer greater than 1. Default: 200 |



APPENDIX B

Client/Server and Secure Connectivity Relationships

This appendix describes the client/server and secure connectivity relationships used among the different applications of the Cisco PGW 2200 Softswitch, Cisco BAMS, and Cisco HSI.

Client/Server and Secure Connectivity Relationships

The following figures show the client/server and secure connectivity relationships used among the different applications of the Cisco PGW 2200 Softswitch, Cisco BAMS, and Cisco HSI.

In a network containing Cisco PGW 2200 Softswitch platforms and Cisco BAMS platforms, the Cisco PGW 2200 Softswitch platform is considered to be a server system to Cisco BAMS. The Cisco BAMS platform is a client of the Cisco PGW 2200 Softswitch platform. This means that in the current, non-secure interface environment, to transfer files from the Cisco PGW 2200 Softswitch to Cisco BAMS, the Cisco BAMS system invokes the FTP program which talks to an FTP daemon process on the Cisco PGW 2200 Softswitch platform.

The following table explains the letters and acronyms used in these figures:

Table B-1 **Letters and Acronyms**

| Acronym/ Abbreviation | Description |
|--------------------------|----------------------|
| C | Client |
| S | Server |
| SCP | Secure Copy |
| SFTP | Secure File Transfer |
| SSH | Secure Shell |

Secure Connectivity Among Cisco PGW 2200 Softswitch Applications

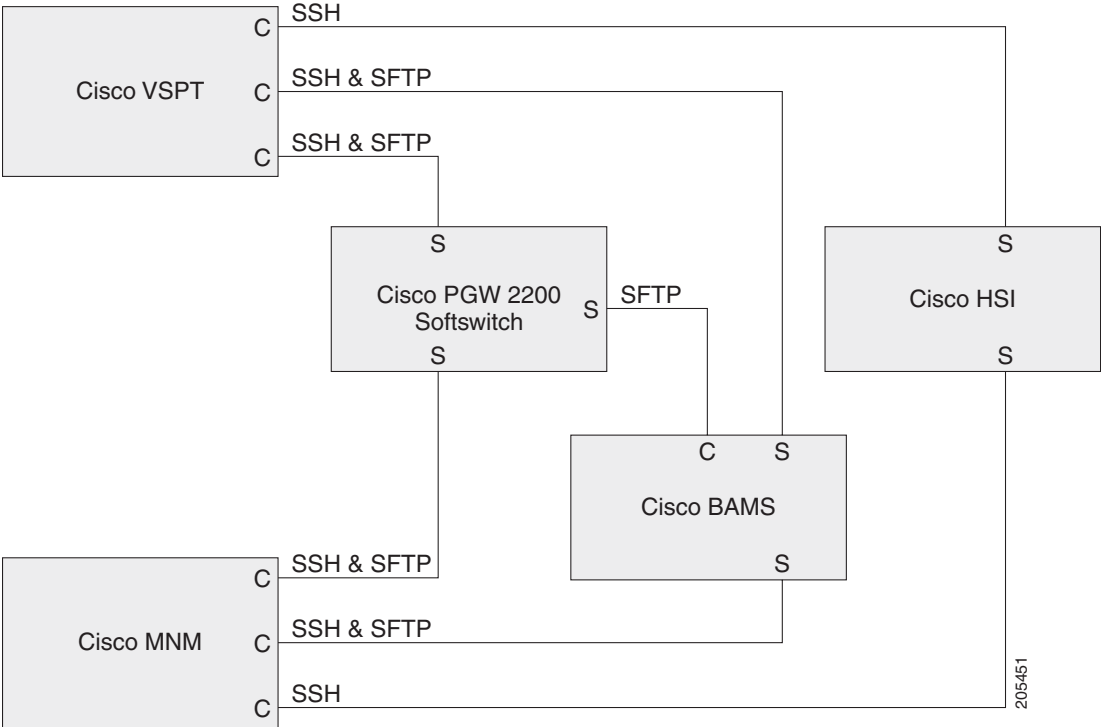
[Figure B-1](#) illustrates the client/server relationship and the secure connectivity used among the different application types of the Cisco PGW 2200 Softswitch and its network management elements. Note that Cisco VSPT has SSH and SFTP interfaces to Cisco HSI.



Note

For simplicity, redundant platforms are not shown in this figure. The secure connectivity among the different application types and the redundant platforms is the same.

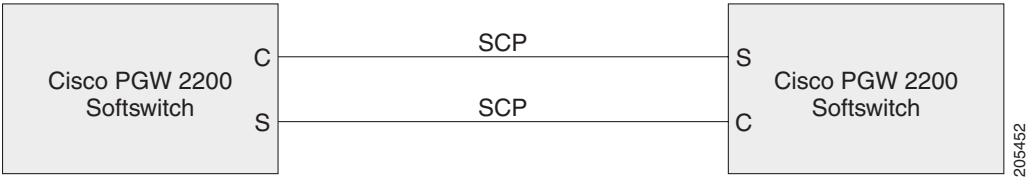
Figure B-1 Secure Connections Among Cisco PGW 2200 Softswitch and Other Devices



Secure Connectivity Between Cisco PGW 2200 Softswitch Application Platforms

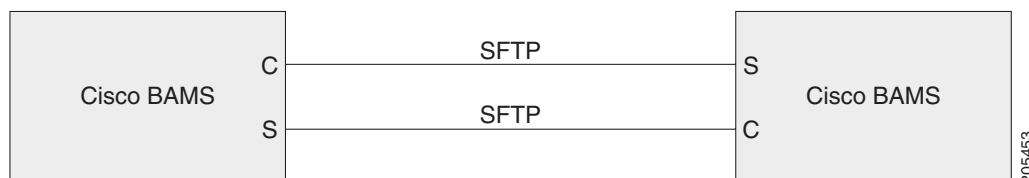
Figure B-2 illustrates the client/server relationship and the secure connectivity used between two Cisco PGW 2200 Softswitch application platforms operating as a redundant pair.

Figure B-2 Secure Connections between Two Cisco PGW 2200 Softswitches



Secure Connectivity Between Cisco BAMS Application Platforms

Figure B-3 illustrates the client/server relationship and the secure connectivity used between two Cisco BAMS application platforms operating as a redundant pair.

Figure B-3 Secure Connections between Cisco BAMS Platforms

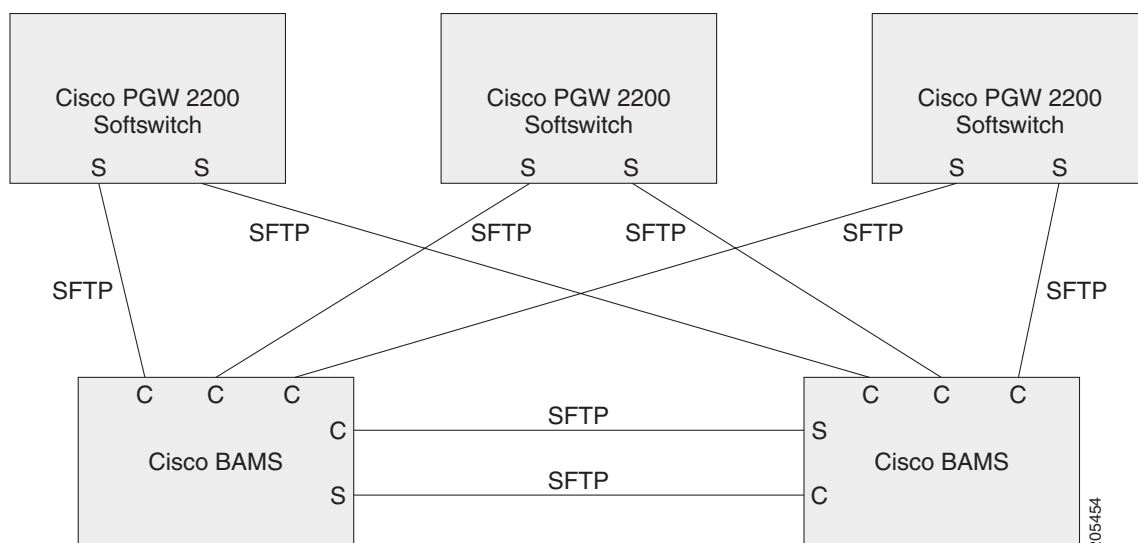
Secure Connectivity Between Cisco BAMS and Cisco PGW 2200 Softswitch Application Platforms

Figure B-4 illustrates the client/server relationship and the secure connectivity used when one redundant Cisco BAMS pair controls multiple Cisco PGW 2200 Softswitch application platforms.



Note

For simplicity, the redundant Cisco PGW 2200 Softswitch application platforms are not shown. The secure connectivity between the redundant Cisco BAMS pair and the redundant Cisco PGW 2200 Softswitch application platforms is the same.

Figure B-4 Secure Connections between Cisco PGW 2200 Softswitch and Cisco BAMS



APPENDIX **C**

HP OpenView Sample SNMP Configuration

Configuring the Cisco PGW 2200 Softswitch to Send Alarms to HP OpenView

This sample configuration sets up a Cisco PGW 2200 Softswitch to send alarms to HP OpenView.

- Step 1** Load the following MIBs in HP OpenView, in the order shown below. To load MIBs, select the **Options** menu, and choose **Load/Unload MIBs: SNMP**.

| MIB | Location |
|--------------------------|----------------------------------|
| CISCO-SMI.my | /opt/TransPath/snmp |
| tp.my | /opt/TransPath/snmp |
| measurement.my | /opt/TransPath/snmp |
| v3-tgt.my | /opt/TransPath/snmp |
| SNMP-FRAMEWORK-MIB.my | ftp://ftp.cisco.com/pub/mibs/v2/ |
| SNMP-NOTIFICATION-MIB.my | ftp://ftp.cisco.com/pub/mibs/v2/ |



Note You must also install the generic HP OpenView MIB files SNMP-FRAMEWORK and SNMP-NOTIFICATION. These files are available from your HP OpenView installation medium.

- Step 2** Open the MIB browser and select the Tools menu, then choose **SNMP MIB Browser**.
- Step 3** Under Name or IP Address, enter the name or IP address of the Cisco PGW 2200 Softswitch you are configuring.
- Step 4** Under Community Name, enter **public**.
- Step 5** Navigate to the SNMP target address table by double-clicking **snmpV2 | snmpModules | snmpTargetMIB | snmpTargetObjects | snmpTargetAddrTable | snmpTargetAddrEntry**.
- Step 6** Select the MIB object **snmpTargetAddrRowStatus** (see table below).
- Step 7** Click **Start Query**. Two values should appear at the bottom of the window, 49: active and 50: active.
- Step 8** Under MIB Instance, enter **51** (see table below).
- Step 9** Under SNMP Set Value, enter **5** (see table below).

- Step 10** Click **Set**. You should see a dialog box indicating that the values are entered successfully.
- Step 11** Continue this process until all the MIB object IDs in the table below have the correct MIB instance and SNMP set values.

| Select MIB Object ID | MIB Instance | SNMP Set Value |
|---------------------------|--------------|---|
| snmpTargetAddrRowStatus | 51 | 5 |
| snmpTargetAddrRowStatus | 52 | 5 |
| snmpTargetAddrTDomain | 52 | .1.3.6.1.6.1.1 |
| snmpTargetAddrTDomain | 52 | .1.3.6.1.6.1.1 |
| snmpTargetAddrTAddress | 51 | Hex representation of NMS IP (see note below) |
| snmpTargetAddrTAddress | 52 | Hex representation of NMS IP (see note below) |
| snmpTargetAddrTimeout | 51 | 100 |
| snmpTargetAddrTimeout | 52 | 100 |
| snmpTargetAddrRetryCount | 51 | 3 |
| snmpTargetAddrRetryCount | 52 | 3 |
| snmpTargetAddrTagList | 51 | Manager1 |
| snmpTargetAddrTagList | 52 | Manager1 |
| snmpTargetAddrParams | 51 | v1ExampleParams |
| snmpTargetAddrParams | 52 | v2cExampleParams |
| snmpTargetAddrStorageType | 51 | 3 |
| snmpTargetAddrStorageType | 52 | 3 |
| snmpTargetAddrRowStatus | 51 | 1 |
| snmpTargetAddrRowStatus | 52 | 1 |

**Note**

When you are configuring `snmpTargetAddrTAddress`, the address of the network management station running HP OpenView must be entered. This SNMP field is a generic six-byte field designed to accommodate IP and non-IP SNMP implementations. Since the Cisco PGW 2200 Softswitch supports only SNMP over IP, this field always contains the IP address of the network management system. The IP address, however, must be converted into a six-byte hexadecimal value. This is done by converting the IP address to hexadecimal notation, then appending two bytes of zeros as padding. For example, if the IP address of the HP OpenView station is 172.24.236.241, the value entered for `snmpTargetAddrTAddress` is AC 18 EC F1 00 00.

**Tip**

You can verify the settings by selecting each MIB object ID and clicking **Start Query**. When you do this for `snmpTargetAddrRowStatus`, it should show four entries set to active.

- Step 12** Navigate to the `snmpNotify` table by clicking **Up Tree** four times to return to the `snmpModules` part of the MIB. Then navigate down the tree by double-clicking **snmpNotificationMIB** | **snmpNotifyObjects** | **snmpNotifyTable** | **snmpNotifyEntry**.
- Step 13** As before, associate the correct MIB instance and SNMP set values with the MIB object IDs.

| Select MIB Object ID | MIB Instance | SNMP Set Value |
|-----------------------|--------------|----------------|
| snmpNotifyRowStatus | 50 | 5 |
| snmpNotifyTag | 50 | Manager1 |
| snmpNotifyStorageType | 50 | 3 |
| snmpNotifyRowStatus | 50 | 1 |

**Tip**

You can verify the settings by selecting each MIB OID and clicking **Start Query**. When you do this for snmpNotifyRowStatus, it should show four entries set to active. When you have verified the settings, you can close the MIB browser window.

Step 14 Click **Close**.

Step 15 At this point, HP OpenView should start receiving alarms from the Cisco PGW 2200 Softswitch. You can verify this by, for example, performing a **set-sc-state** MML command to take a signaling channel out of service.

Formatting Trap Messages

When HP OpenView receives the traps from the Cisco PGW 2200 Softswitch, HP OpenView does not automatically interpret the trap and display it in a useful manner. The trap is sent with basic information indicating the alarm category, description, and severity. Because many failures require extra detail for troubleshooting, you should refer to the log file on the Cisco PGW 2200 Softswitch for complete alarm information and for determining root causes.

You can, however, configure HP OpenView to format the traps into a more readily understandable format by following the steps below:

- Step 1** Open the Event Configuration window by selecting **Options | Event Configuration** from the HP OpenView menu.
- Step 2** Under Enterprise Name, select **TransPath**. The five alarm types should be displayed under Event Identification.
- Step 3** Double-click one of the event names under Event Identification; for example, commAlarm.
- Step 4** Under Event Log Message, enter the message that you want logged to the HP OpenView log file when HP OpenView receives this alarm. You can use variables from the following table in your message to provide specific information about the alarm.

| Variable | Definition | Explanation |
|----------|----------------|--------------------------------------|
| \$1 | tpAlarmId | Alarm identification |
| \$2 | tpAlarmCatId | Alarm category identification number |
| \$3 | tpAlarmCatName | Alarm category name |
| \$4 | tpAlarmCatDesc | Alarm category description |

| | | |
|------|-----------------|--|
| \$5 | tpAlarmSet | Alarm set/not set. 2 means the alarm is being set. 1 means the alarm is being cleared |
| \$6 | tpAlarmNotify | Alarm notified/not notified |
| \$7 | tpAlarmSeverity | Alarm severity |
| \$8 | tpAlarmReported | Alarm reported |
| \$9 | tpComponentId | Component identification number. This number consists of two parts, the component type and component instance. The most significant 2 bytes signify the component type. The least significant 2 bytes are the sequential instance of the type. |
| \$10 | tpComponentType | Component type identification number |
| \$11 | tpCompMMLName | Short notation of the component name. It is also the MML name that can be used in the MML session. |
| \$12 | tpCompDesc | Component description |
| \$13 | tpCompParentId | Component parent identification |
| \$14 | tpAlarmTime | Time the alarm occurred |

Following is an example of an event log message string:

```
SC2200: ID#: $13 Name: $12 Set: $10 MMLname: $4 CatDesc: $11 CompDesc: $3
Severity: $8 CompID: $6 CompType: $5 CatID: $14 AlarmNotify: $9 AlarmTime: $1
ParentID: $2 AlarmReported: $7
```

Following is another example showing more simple formatting:

```
MGC $7 alarm $5 -- $12: $4
```

- Step 5** Click **OK** to set your message.
- Step 6** Repeat the procedure for each event name.
- Step 7** From the Event Configuration window, select **File | Save**.
- Step 8** Close the window.
- Step 9** Verify that alarms are being received and formatted correctly by generating an alarm on the Cisco PGW 2200 Softswitch (for instance, take a signaling channel out of service to see if you get an alarm).



APPENDIX D

Sample Installation Scripts

This appendix contains sample outputs from the following:

- [Sample Output from install.sh, page D-1](#)
- [Updated Configuration File Sample, page D-11](#)
- [Sample Configured snmpd.cnf File, page D-13](#)
- [Sample Configured XECfgParm.dat Files for Cisco PGW 2200 Softswitch Release 9.8\(1\), page D-16](#)
- [Sample Configured XECfgParm.dat Files for Cisco PGW 2200 Softswitch Release 9.7\(3\), page D-27](#)
- [Sample Configured XECfgParm.dat Files for Cisco PGW 2200 Softswitch Release 9.6\(1\), page D-37](#)

Sample Output from install.sh

Following is a sample output from the install script.



Note

For Software Release 7.4(10) and later, the install.log is renamed as MGC-install.log and stored in the /var/adm directory. In addition, the pkgerrors.log is renamed to MGC_pkgerrors.log and moved to the /var/adm directory.

```
# cd /cdrom/cdrom0
# ./install.sh

Use supplied admin file for unattended install? [n] [y,n,?,q] y

Base directory for Toolkit (default /opt/Toolkit) [?,q]

#####
# The CSCOgu000 utilities package must be installed prior to other components      #
# but has not been detected on your system.  This package contains all required system #
# parameters necessary for installing the rest of your software.  If you do not install #
# this package, the installation script will exit.                                #
#####

Would you like to install it now? [y] [y,n,?,q] y

Base directory for CiscoMGC (default /opt/CiscoMGC) [?,q]
Enter CiscoMGC user name [mgcusr]
```

Sample Output from install.sh

```

Enter CiscoMGC UID [20000]
Enter CiscoMGC group name [mgcgrp]
Enter CiscoMGC GID [20000]
[mgcgrp] group added
[mgcusr] user added
Modifying /etc/init.d/inetinit

Installation of <CSCOgu000> was successful.

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Cisco Systems, Inc.
13615 Dulles Technology Drive
Herndon, VA 20171

Installation of <CSCOga000> was successful.
WARNING: setting mode of </opt/CiscoMGC/.sw_config> to default mode (755)
WARNING: setting mode of </var/spool/cron/crontabs/mgcusr> to default mode (644)

Uncompressing EISUP
Uncompressing ISDNBRI
Uncompressing ISDNIP
Uncompressing ISDNL3
Uncompressing IUA
Uncompressing LI
Uncompressing LogServerd
Uncompressing M3UA
Uncompressing MGCP
Uncompressing QBE_V5
Uncompressing QBE_V6
Uncompressing SIP
Uncompressing SS7
Uncompressing SUA
Uncompressing TCAP
Uncompressing almM
Uncompressing amDmpr
Uncompressing cdrDmpr
Uncompressing cfgM
Installing chk_inv
Uncompressing diskmonitor
Uncompressing engine.no_smartalloc
Uncompressing engine.smartalloc
Uncompressing foverd
Uncompressing ioChanMgr
Uncompressing measMgr
Uncompressing mmBldCfg
Uncompressing mmSAgt
Uncompressing mndbd
Uncompressing mml
Uncompressing pom
Uncompressing procM
Uncompressing replicator
Uncompressing sagt

```



```
Installing libACE.so
Installing libbtsUtil.so
Installing libcmg.so
Installing libconvutil.so
Installing libcxn.so
Installing libda.so
Installing libeng.so
Installing libengif.so
Installing libhelp.so
Installing libinf.so
Installing libmmdb.so
Installing libpem.so
Installing libpolbase.so
Installing libpolcomp.so
Installing libpolfiles.so
Installing libpolnuman.so
Installing libpolroute.so
Installing libpom.so
Installing libpxe.so
Installing libpxelog.so
Installing libqbe.so
Installing libqbe_v6.so
Installing librds.so
Installing librmg.so
Installing librudp.so
Installing libsa.so
Installing libstlport.so.1
Installing libtcpServer.so
Installing libxe.so
Installing libxml2.so.2
Updating parameters for CiscoMGC
Updating parameters for SW_Layout.cfg
Updating parameters for helpCommands.xsd
Updating parameters for mmlCommands.xml
Updating parameters for mmlLICommands.xml
Updating parameters for log_rotate.sh
Updating parameters for startAudit.sh
Updating parameters for diagdata
Updating parameters for .create_liusr
Updating parameters for .cshrc
Updating parameters for .delete_liusr
Updating parameters for .dump-prov
Updating parameters for .master.cks
Updating parameters for .perf_setup
Updating parameters for backup.sh
Updating parameters for config-lib
Updating parameters for config-snmp
Updating parameters for init.tcl
Updating parameters for mgcbakup
Updating parameters for mgcrestore
Updating parameters for restore.sh
Updating parameters for rmsem.sh
Updating parameters for startAudit.mml
Updating parameters for startLogServer

Installation of <CSC0ga001> was successful.

Modifying /etc/syslog.conf
Updating parameters for .odbc.ini
Updating parameters for backupDb.sh
Updating parameters for restoreDb.sh
Set TOS for timesten replicator
Untarring TimesTen image in /opt/ttdb-install
```

Preparing to install TimesTen in /opt on va-redskins

Executing TimesTen installation script...

NOTE: Each TimesTen installation is identified by a unique instance name.
The instance name must be a non-null alphanumeric string, not longer
than 255 characters.

Instance name will be 'tt60'.

Please select a product :

- [1] Oracle TimesTen In-Memory Database
- [2] Cache Connect to Oracle

Of the three components:

- [1] Client/Server and Data Manager
- [2] Data Manager Only
- [3] Client Only

Installing into /opt/TimesTen/tt60 ...
Creating /opt/TimesTen/tt60 ...
Uncompressing ...

The TimesTen Demo applications can take up to 64 Mbytes of disk space.
Depending on how your system is configured, you may not want to create the
DemoDataStore directory in the default location, /var/TimesTen/tt60/DemoDataStore

WARNING: It is advised that you do not install the DemoDataStore directory
onto a networked drive. Please see the TimesTen install guide for
more info.

Creating /var/TimesTen/tt60/DemoDataStore ...

NOTE: All installations that replicate to each other must use the same daemon
port number that is set at installation time. The daemon port number can
be verified by running 'ttVersion'.

The default port number is 16001.
The daemon will run on the default port number (16001).
Processing /opt/TimesTen/tt60/PERL/perl.tar ...
System logging appears to be configured correctly.
(TimesTen syslog messages should be recorded in the file '/var/adm/messages')
Installing server components ...
Starting the daemon ...
The tt60 daemon has started successfully.
Installing client components ...
Creating new /var/TimesTen/sys.ttconnect.ini
Extracting 3rd party tools ...
Creating /opt/TimesTen/tt60/doc ...
End of TimesTen installation.
TimesTen installation script returned status 0

Program complete
Restoring default schema.
Sun Microsystems Inc.SunOS 5.10GenericJanuary 2005
Copyright (c) 1996-2005, Oracle. All rights reserved.

```

Installation of <CSC0ga002> was successful.

Updating parameters for critagt.cnf
Updating parameters for startcia.sh
Updating inittab

Installation of <CSC0ga003> was successful.

Installing /opt/Toolkit/Packages/Packages.tar.gz
Installing /opt/Toolkit/bytecode/XECfg/XECfg.tar.gz
Installing /opt/Toolkit/bytecode/am/am.tar.gz
Installing /opt/Toolkit/bytecode/cdr/cdr.tar.gz
Installing /opt/Toolkit/bytecode/log/Viewer.tar.gz
Installing /opt/Toolkit/bytecode/toolbar/toolbar.tar.gz
Installing /opt/Toolkit/bytecode/tv/tv.tar.gz
Installing /opt/Toolkit/tcl/tcl.tar.gz
Updating parameters for MGC_Setup
Updating parameters for MGC_Toolkit
Updating parameters for init.tcl
Updating parameters for toolbar.sh
Updating parameters for toslaveside
Setting VERSION=9.7(1.13)T in version.dat

Installation of <CSC0ga004> was successful.

Installing /opt/CiscoMGC/lib/perl5/5.00503.tar.gz
Installing /opt/tibrv/tibco.tar.gz
Updating parameters for tibco.cfg
Updating parameters for tib4pgw.sh
Updating parameters for tibAdapter.pl
Updating parameters for tibsimulator.pl

Installation of <CSC0ga006> was successful.

Installing ca
Uncompressing callver
Installing get_trc.sh
Installing sim
Uncompressing simWriter
Uncompressing siptool
Installing sp

Installation of <CSC0gt001> was successful.

Installing migrate_cpp_4_5
Installing migrate_cpp_5_6
Installing migrate_cpp_DB
Updating parameters for XECfgParm.dat
Updating parameters for trigger.dat
Updating parameters for di
Updating parameters for migrate
Updating parameters for migrateTKGFile
Installing /opt/CiscoMGC/etc/CONFIG_LIB/migrate_mod.tar.gz
Installing /opt/CiscoMGC/etc/migrate/migrate_scr.tar.gz
Installing new .dat files in /opt/CiscoMGC/etc

Installation of <CSC0gc001> was successful.

Miscellaneous Protocols
#####
##          01          ##          02          ##
#####
## BTNUP_BTNR167 ## IETF_SIP ##

```

Sample Output from install.sh

```

##  BTNUP_IUP          ##          ##
##  DPNSS_BTNRI188    ##          ##
#####

SS7 Protocol Family          PRI Protocol Family
#####
##          10          ##          20          ##
#####
##  ANSIS7_2K          ##          ATT_41459          ##
##  ANSIS7_92          ##          ATT_41459_C2        ##
##  ANSIS7_C2          ##          BELL_1268          ##
##  ANSIS7_C3          ##          BELL_1268_C2        ##
##  ANSIS7_E1          ##          ETS_300_102        ##
##  ANSIS7_STANDARD    ##          ETS_300_102_C2      ##
##  GR317              ##          ETS_300_172        ##
#####

Q761 Version 1 Protocol Family
#####
##          30          ##          31          ##          32          ##          33          ##
#####
##  ETS_300_121        ##  Q761_BASE          ##  Q761_GERMAN          ##  Q761_SINGAPORE        ##
##  ETS_300_356        ##  Q761_BELG          ##  Q761_INDIA          ##  Q761_SINGAPORE_C2    ##
##  HONGKONG           ##  Q761_BELG_97VER        ##  Q761_KOREAN          ##  Q761_TAIWAN          ##
##  ISUPV1_POLI        ##  Q761_CHILE          ##  Q761_NEWZEALAND      ##  Q761_THAILAND        ##
##  Q761_ARGENTINA      ##  Q761_CHINA          ##  Q761_97VER_BASE      ##  Q761_MALAYSIAN       ##
##  Q761_ARGENTINA_C2   ##  Q761_CHINA_C2        ##  Q761_PERU            ##  Q761_99VER_BASE      ##
##  Q761_AUSTRAL        ##  Q761_DANISH          ##  Q761_PORTUGAL        ##  Q761_99VER_AUSTRAL_C3 ##
##  Q761_AUSTRAL_C2    ##          ##          ##          ##          ##
#####

Q761 Version 2 Protocol Family          Q761 Version 3 Protocol Family
#####
##          40          ##          41          ##          42          ##          50          ##
#####
##  ISUPV2_32DIG        ##  ISUPV2_JAPAN          ##  ISUPV2_VIETNAM        ##  ISUPV3          ##
##  ISUPV2_AUSTRIAN      ##  ISUPV2_JAPAN_C2        ##  ISUPV2_AUSTRIAN_C2    ##  ISUPV3_UK        ##
##  ISUPV2_CZECH         ##  ISUPV2_NORWEGIAN        ##          ##  ISUPV3_UK_C2      ##
##  ISUPV2_DUTCH         ##  ISUPV2_POLISH          ##          ##  ISUPV3_UK_C3      ##
##  ISUPV2_FINNISH96     ##  ISUPV2_SPANISH          ##          ##  ISUPV3_UK_C4      ##
##  ISUPV2_FRENCH        ##  ISUPV2_SPANISH_C2        ##          ##          ##
##  ISUPV2_GERMAN        ##  ISUPV2_SWISS           ##          ##          ##
##  ISUPV2_ISRAEL        ##  ISUPV2_SWISS_C2        ##          ##          ##
#####

Q721 Protocol Family          Q767 Protocol Family
#####
##          60          ##          70          ##          71          ##
#####
##  Q721_BASE          ##  Q767_AUSTRALIA          ##  Q767_MEXICAN          ##
##  Q721_BRAZILIAN      ##  Q767_BASE              ##  Q767_NIGERIAN          ##
##  Q721_CHINA          ##  Q767_BRAZIL            ##  Q767_RUSS              ##
##  Q721_FRENCH         ##  Q767_COLOMBIA          ##  Q767_SINGAPORE          ##
##  Q721_PHILLIPINE     ##  Q767_GUATEMALA          ##  Q767_SPAN              ##
##          ##          ##  Q767_INDONESIA          ##  Q767_SWED              ##
##          ##          ##  Q767_ITAL              ##  Q767_TURKISH           ##
##          ##          ##  Q767_ITAL_C2          ##          ##
#####

Q931 Protocol Family
#####
##          80          ##
#####
##  Q931              ##

```

```

## Q931_AUSTRALIA ##
## Q931_SINGAPORE ##
#####

Would you like to add a protocol set to your system? [y] [y,n,?,q] y
SNMP Research Critical Application Subagent Version 16.2.0.35
@(#)Copyright 1992-2008 SNMP Research, Incorporated
SNMP Research MIB2 Subagent Version 16.2.0.35
@(#)Copyright 1992-2008 SNMP Research, Incorporated
SNMP Research Host Resources Subagent Version 16.2.0.35
@(#)Copyright 1992-2008 SNMP Research, Incorporated
hostagt: GetSNMPPort: no snmp entry in /etc/services
                at line 118 in file getport.c
hostagt: snmp port is 161 from #define SNMP_PORT
                at line 123 in file getport.c
SNMP Research File System Monitor Subagent Version 16.2.0.35
@(#)Copyright 1992-2008 SNMP Research, Incorporated
SNMP Research BRASS Server/Subagent Version 16.2.0.35
Copyright 1989-2008 SNMP Research, Inc.
SNMP Research Log File Monitor Subagent Version 16.2.0.35
@(#)Copyright 1992-2008 SNMP Research, Incorporated
y
Please insert a two digit package identifier and type <enter>
If you choose to add all protocols to your system, type "all": all
Uncompressing ANSIS7_STANDARD_SIPI.mdo
Uncompressing ANSIS7_STANDARD_SIPI.so
Uncompressing ASP_NotRealProtocol.mdo
Uncompressing ASP_NotRealProtocol.so
Uncompressing CALLVER.mdo
Uncompressing CALLVER.so
Uncompressing CALLVER_GENERIC_ANALYSIS.mdo
Uncompressing CALLVER_GENERIC_ANALYSIS.so
Uncompressing CALLVER_LCM.mdo
Uncompressing CDR_MAN.mdo
Uncompressing CDR_MAN.so
Uncompressing CONNECTION_PLANE_MANAGER.mdo
Uncompressing CONNECTION_PLANE_MANAGER.so
Uncompressing EISUP.mdo
Uncompressing EISUP.so
Uncompressing ETS_300_172_SLAVE.mdo
Uncompressing ETS_300_172_SLAVE.so
Uncompressing GENERIC_ANALYSIS.mdo
Uncompressing GENERIC_ANALYSIS.so
Uncompressing IN_TRIGGER.mdo
Uncompressing IN_TRIGGER.so
Uncompressing ISUPV2_FINNISH96_SIPI.mdo
Uncompressing ISUPV2_FINNISH96_SIPI.so
Uncompressing ISUPV2_GERMAN_SIPI.mdo
Uncompressing ISUPV2_GERMAN_SIPI.so
Uncompressing ISUPV3_UK_SIPI.mdo
Uncompressing ISUPV3_UK_SIPI.so
Uncompressing LEG_CONTROLLER.mdo
Uncompressing LEG_CONTROLLER.so
Uncompressing LEG_CONTROLLER_H248V2.mdo
Uncompressing LEG_CONTROLLER_H248V2.so
Uncompressing LEG_CONTROLLER_MGCP.mdo
Uncompressing LEG_CONTROLLER_MGCP.so
Uncompressing Q761_97VER_RUSS_SIPI.mdo
Uncompressing Q761_97VER_RUSS_SIPI.so
Uncompressing Q761_99VER_BASE_SIPI.mdo
Uncompressing Q761_99VER_BASE_SIPI.so
Uncompressing cc.mdo
Uncompressing cc.so
Uncompressing dummy.mdo

```

Sample Output from install.sh

```

Uncompressing dummy.so
Uncompressing lcm.mdo
Uncompressing lcm.so

Installation of <CSC000000> was successful.
Uncompressing BTNUP_BTNR167.mdo
Uncompressing BTNUP_BTNR167.so
Uncompressing BTNUP_IUP.mdo
Uncompressing BTNUP_IUP.so
Uncompressing DPNSS_BTNR188.mdo
Uncompressing DPNSS_BTNR188.so
Uncompressing QBE.mdo
Uncompressing QBE.so

Installation of <CSC001000> was successful.
Uncompressing IETF_SIP.mdo
Uncompressing IETF_SIP.so

Installation of <CSC002000> was successful.
Uncompressing ANSISS7_2K.mdo
Uncompressing ANSISS7_2K.so
Uncompressing ANSISS7_92.mdo
Uncompressing ANSISS7_92.so
Uncompressing ANSISS7_C2.mdo
Uncompressing ANSISS7_C2.so
Uncompressing ANSISS7_C3.mdo
Uncompressing ANSISS7_C3.so
Uncompressing ANSISS7_E1.mdo
Uncompressing ANSISS7_E1.so
Uncompressing ANSISS7_STANDARD.mdo
Uncompressing ANSISS7_STANDARD.so
Uncompressing GR317.mdo
Uncompressing GR317.so

Installation of <CSC010000> was successful.
Uncompressing ATT_41459.mdo
Uncompressing ATT_41459.so
Uncompressing ATT_41459_C2.mdo
Uncompressing ATT_41459_C2.so
Uncompressing BELL_1268.mdo
Uncompressing BELL_1268.so
Uncompressing BELL_1268_C2.mdo
Uncompressing BELL_1268_C2.so
Uncompressing ETS_300_102.mdo
Uncompressing ETS_300_102.so
Uncompressing ETS_300_102_C2.mdo
Uncompressing ETS_300_102_C2.so
Uncompressing ETS_300_172.mdo
Uncompressing ETS_300_172.so

Installation of <CSC020000> was successful.
Uncompressing ETS_300_121.mdo
Uncompressing ETS_300_121.so
Uncompressing ETS_300_356.mdo
Uncompressing ETS_300_356.so
Uncompressing HONGKONG.mdo
Uncompressing HONGKONG.so
Uncompressing ISUPV1_POLI.mdo
Uncompressing ISUPV1_POLI.so
Uncompressing Q761_ARGENTINA.mdo
Uncompressing Q761_ARGENTINA.so
Uncompressing Q761_ARGENTINA_C2.mdo
Uncompressing Q761_ARGENTINA_C2.so
Uncompressing Q761_AUSTRAL.mdo

```

```
Uncompressing Q761_AUSTRAL.so
Uncompressing Q761_AUSTRAL_C2.mdo
Uncompressing Q761_AUSTRAL_C2.so

Installation of <CSC030000> was successful.
Uncompressing Q761_BASE.mdo
Uncompressing Q761_BASE.so
Uncompressing Q761_BELG.mdo
Uncompressing Q761_BELG.so
Uncompressing Q761_BELG_97VER.mdo
Uncompressing Q761_BELG_97VER.so
Uncompressing Q761_CHILE.mdo
Uncompressing Q761_CHILE.so
Uncompressing Q761_CHINA.mdo
Uncompressing Q761_CHINA.so
Uncompressing Q761_CHINA_C2.mdo
Uncompressing Q761_CHINA_C2.so
Uncompressing Q761_DANISH.mdo
Uncompressing Q761_DANISH.so

Installation of <CSC031000> was successful.
Uncompressing Q761_97VER_BASE.mdo
Uncompressing Q761_97VER_BASE.so
Uncompressing Q761_97VER_RUSS.mdo
Uncompressing Q761_97VER_RUSS.so
Uncompressing Q761_97VER_RUSS_C2.mdo
Uncompressing Q761_97VER_RUSS_C2.so
Uncompressing Q761_GERMAN.mdo
Uncompressing Q761_GERMAN.so
Uncompressing Q761_INDIA.mdo
Uncompressing Q761_INDIA.so
Uncompressing Q761_KOREAN.mdo
Uncompressing Q761_KOREAN.so
Uncompressing Q761_NEWZEALAND.mdo
Uncompressing Q761_NEWZEALAND.so
Uncompressing Q761_PERU.mdo
Uncompressing Q761_PERU.so
Uncompressing Q761_PORTUGAL.mdo
Uncompressing Q761_PORTUGAL.so

Installation of <CSC032000> was successful.
Uncompressing Q761_99VER_AUSTRAL_C3.mdo
Uncompressing Q761_99VER_AUSTRAL_C3.so
Uncompressing Q761_99VER_BASE.mdo
Uncompressing Q761_99VER_BASE.so
Uncompressing Q761_MALAYSIAN.mdo
Uncompressing Q761_MALAYSIAN.so
Uncompressing Q761_SINGAPORE.mdo
Uncompressing Q761_SINGAPORE.so
Uncompressing Q761_SINGAPORE_C2.mdo
Uncompressing Q761_SINGAPORE_C2.so
Uncompressing Q761_TAIWAN.mdo
Uncompressing Q761_TAIWAN.so
Uncompressing Q761_THAILAND.mdo
Uncompressing Q761_THAILAND.so

Installation of <CSC033000> was successful.
Uncompressing ISUPV2_AUSTRIAN.mdo
Uncompressing ISUPV2_AUSTRIAN.so
Uncompressing ISUPV2_CZECH.mdo
Uncompressing ISUPV2_CZECH.so
Uncompressing ISUPV2_DUTCH.mdo
Uncompressing ISUPV2_DUTCH.so
Uncompressing ISUPV2_FINNISH96.mdo
```

Sample Output from install.sh

```

Uncompressing ISUPV2_FINNISH96.so
Uncompressing ISUPV2_FRENCH.mdo
Uncompressing ISUPV2_FRENCH.so
Uncompressing ISUPV2_GERMAN.mdo
Uncompressing ISUPV2_GERMAN.so
Uncompressing ISUPV2_ISRAEL.mdo
Uncompressing ISUPV2_ISRAEL.so

```

Installation of <CSCO40000> was successful.

```

Uncompressing ISUPV2_JAPAN.mdo
Uncompressing ISUPV2_JAPAN.so
Uncompressing ISUPV2_JAPAN_C2.mdo
Uncompressing ISUPV2_JAPAN_C2.so
Uncompressing ISUPV2_NORWEGIAN.mdo
Uncompressing ISUPV2_NORWEGIAN.so
Uncompressing ISUPV2_POLISH.mdo
Uncompressing ISUPV2_POLISH.so
Uncompressing ISUPV2_SPANISH.mdo
Uncompressing ISUPV2_SPANISH.so
Uncompressing ISUPV2_SPANISH_C2.mdo
Uncompressing ISUPV2_SPANISH_C2.so
Uncompressing ISUPV2_SWISS.mdo
Uncompressing ISUPV2_SWISS.so
Uncompressing ISUPV2_SWISS_C2.mdo
Uncompressing ISUPV2_SWISS_C2.so

```

Installation of <CSCO41000> was successful.

```

Uncompressing ISUPV2_AUSTRIAN_C2.mdo
Uncompressing ISUPV2_AUSTRIAN_C2.so
Uncompressing ISUPV2_VIETNAM.mdo
Uncompressing ISUPV2_VIETNAM.so

```

Installation of <CSCO42000> was successful.

```

Uncompressing ISUPV3.mdo
Uncompressing ISUPV3.so
Uncompressing ISUPV3_FRENCH.mdo
Uncompressing ISUPV3_FRENCH.so
Uncompressing ISUPV3_UK.mdo
Uncompressing ISUPV3_UK.so
Uncompressing ISUPV3_UK_C2.mdo
Uncompressing ISUPV3_UK_C2.so
Uncompressing ISUPV3_UK_C3.mdo
Uncompressing ISUPV3_UK_C3.so
Uncompressing ISUPV3_UK_C4.mdo
Uncompressing ISUPV3_UK_C4.so

```

Installation of <CSCO50000> was successful.

```

Uncompressing Q721_BASE.mdo
Uncompressing Q721_BASE.so
Uncompressing Q721_BRAZILIAN.mdo
Uncompressing Q721_BRAZILIAN.so
Uncompressing Q721_BRAZILIAN_C2.mdo
Uncompressing Q721_BRAZILIAN_C2.so
Uncompressing Q721_CHINA.mdo
Uncompressing Q721_CHINA.so
Uncompressing Q721_FRENCH.mdo
Uncompressing Q721_FRENCH.so
Uncompressing Q721_PHILLIPINE.mdo
Uncompressing Q721_PHILLIPINE.so

```

Installation of <CSCO60000> was successful.

```

Uncompressing Q767_AUSTRALIA.mdo
Uncompressing Q767_AUSTRALIA.so
Uncompressing Q767_BASE.mdo

```



```
Uncompressing Q767_BASE.so
Uncompressing Q767_BRAZIL.mdo
Uncompressing Q767_BRAZIL.so
Uncompressing Q767_BRAZIL_C2.mdo
Uncompressing Q767_BRAZIL_C2.so
Uncompressing Q767_COLOMBIA.mdo
Uncompressing Q767_COLOMBIA.so
Uncompressing Q767_GUATEMALA.mdo
Uncompressing Q767_GUATEMALA.so
Uncompressing Q767_INDONESIA.mdo
Uncompressing Q767_INDONESIA.so
Uncompressing Q767_ITAL.mdo
Uncompressing Q767_ITAL.so
Uncompressing Q767_ITAL_C2.mdo
Uncompressing Q767_ITAL_C2.so

Installation of <CSCO70000> was successful.
Uncompressing Q767_MEXICAN.mdo
Uncompressing Q767_MEXICAN.so
Uncompressing Q767_NIGERIAN.mdo
Uncompressing Q767_NIGERIAN.so
Uncompressing Q767_RUSS.mdo
Uncompressing Q767_RUSS.so
Uncompressing Q767_RUSS_C2.mdo
Uncompressing Q767_RUSS_C2.so
Uncompressing Q767_SINGAPORE.mdo
Uncompressing Q767_SINGAPORE.so
Uncompressing Q767_SPAN.mdo
Uncompressing Q767_SPAN.so
Uncompressing Q767_SWED.mdo
Uncompressing Q767_SWED.so
Uncompressing Q767_TURKISH.mdo
Uncompressing Q767_TURKISH.so

Installation of <CSCO71000> was successful.
Uncompressing Q931.mdo
Uncompressing Q931.so
Uncompressing Q931_AUSTRALIA.mdo
Uncompressing Q931_AUSTRALIA.so
Uncompressing Q931_SINGAPORE.mdo
Uncompressing Q931_SINGAPORE.so

Installation of <CSCO80000> was successful.
Beginning Check of System Performance Requirements

Number of CPUs in system 2
Memory size: 2048 Megabytes
The sparcv9 processor operates at 1336 MHz,

Swap is total: 76384k bytes allocated + 13744k reserved = 90128k used, 5635696k available
Please Verify that you have over 4000000K Available swap

The tt60 daemon has stopped successfully.
Installation completed Wed Sep 24 03:52:32 EDT 2008
Installation log can be found in /var/adm/MGC_install.log

bash-3.00#
```

Updated Configuration File Sample

Following is an example of an updated configuration file. This file is located in `/opt/CiscoMGC/etc/`.

```

#----- MGC Environment Configuration Tool Usage -----
#
#           REQUIRED STARTUP PARAMETERS
#           DO NOT MOVE THESE PARAMETERS BEYOND THIS BOX
*.platformId = 1
*.transpathId = 01 # Transpath Id for ASN
*.ownTranspathId = 01
*.peerTranspathId = 02
*.MGC_CDR_NODE_ID = MGC-CDR-NODE-STRING # System Id for CDR
*.desiredPlatformState = standalone
*.virtualFaultTolerant = false # avoid prov-dply/sync on FT mode in egw
##### *.SysConnectDataAccess = true # true, establish conn. to Data Access Subsystem
##### Last modified by mgcusr using MGC Setup Tool: Wed Sep 24 08:22:22 GMT 2008
*.SysConnectDataAccess = false # true, establish conn. to Data Access Subsystem
*.GWCclearChannelAlgorithm = null # clear channel algorithm
*.SipToIsupInterworkingInd = 0 # 0= No Interworking Encountered
# 1= Interworking Encountered
*.AlarmOnActive = false # true, raise an alarm when pgw is active

##### *.ipAddrLocalA = 0.0.0.0 # Should be same as *.IP_Addr1
##### Last modified by mgcusr using MGC Setup Tool: Wed Sep 24 08:22:22 GMT 2008
*.ipAddrLocalA = 10.74.49.153 # Should be same as *.IP_Addr1
##### *.ipAddrLocalB = 0.0.0.0
##### Last modified by mgcusr using MGC Setup Tool: Wed Sep 24 08:22:22 GMT 2008
*.ipAddrLocalB = 10.0.49.153
*.ipAddrPeerA = 0.0.0.0 # Failover peer's address
*.ipAddrPeerB = 0.0.0.0

##### *.IP_Addr1 = 0.0.0.0 # Address of interface on motherboard
##### Last modified by mgcusr using MGC Setup Tool: Wed Sep 24 08:22:22 GMT 2008
*.IP_Addr1 = 10.74.49.153 # Address of interface on motherboard
##### *.IP_Addr2 = 0.0.0.0
##### Last modified by mgcusr using MGC Setup Tool: Wed Sep 24 08:22:22 GMT 2008
*.IP_Addr2 = 10.0.49.153
*.IP_Addr3 = 0.0.0.0
*.IP_Addr4 = 0.0.0.0

# These are Next Hop (router) IP Addresses
# They should be used when the Next Hop address(es)
# are different on the two MGC hosts
*.IP_NextHop1 = 0.0.0.0
*.IP_NextHop2 = 0.0.0.0
*.IP_NextHop3 = 0.0.0.0
*.IP_NextHop4 = 0.0.0.0
*.IP_NextHop5 = 0.0.0.0
*.IP_NextHop6 = 0.0.0.0
*.IP_NextHop7 = 0.0.0.0
*.IP_NextHop8 = 0.0.0.0

*.netmaskPeerB = 255.255.255.255
*.netmaskPeerA = 255.255.255.255
*.netmaskLocalB = 255.255.255.255
*.netmaskLocalA = 255.255.255.255
*.Peer_NextHop1 = 0.0.0.0
*.Peer_NextHop2 = 0.0.0.0
*.Peer_NextHop3 = 0.0.0.0
*.Peer_NextHop4 = 0.0.0.0
*.Peer_NextHop5 = 0.0.0.0
*.Peer_NextHop6 = 0.0.0.0
*.Peer_NextHop7 = 0.0.0.0
*.Peer_NextHop8 = 0.0.0.0

#####

```

```
# Improved SIP Failover Support. Setting 0.0.0.0 to both will disable
# the SIP Improved failover support Feature. Configuring only one will
# cause the switchover, if the physical interface where it present fails.
#
*.Virtual_IP_Addr1 =          0.0.0.0   # Must be from *.IP_Addr1 Subnet.
*.Virtual_IP_Addr2 =          0.0.0.0   # Must be from *.IP_Addr2 Subnet.
#####

*.geoSeparation =             false     # Geographical separated? or not.

# To disable sip failover, you have to set both Virtual_IP_Addr* to 0.0.0.0.
# Set *.sipFailover=false does not always mean sip failover is disabled.
#
*.sipFailover   =             false     # Failover if SIP Service fails.

*.stPort =                    0
engine.SysVirtualSwitch =      1         # 0=Nailed-Up, 1=Switched-MGC, 2=Switched-JCS
##### Last modified by mgcusr using MGC Setup Tool: Wed Sep 24 08:22:22 GMT 2008
engine.SysVirtualSwitch = 1         # 0=Nailed-Up, 1=Switched-MGC, 2=Switched-JCS
pom.dataSync =      false # don't synch slave data with master
foverd.ipLocalPortA =0
foverd.ipPeerPortA =0
foverd.ipLocalPortB =0
foverd.ipPeerPortB =0
##### *.numberOfThreads = 2
##### Last modified by mgcusr using MGC Setup Tool: Wed Sep 24 08:22:22 GMT 2008
##### *.numberOfThreads = 2
##### Last modified by mgcusr using MGC Setup Tool: Wed Oct 22 07:22:03 GMT 2008
*.numberOfThreads = 1
```

Sample Configured snmpd.cnf File

The following shows a sample snmpd.cnf file.



Note

This sample configuration enables both snmpv1 and snmpv2 traps. Therefore, you will see two coldStart traps when the software is initialized—one for version1 and one for version 2.

```
# Entry type: sysDescr
# Entry format: octetString
sysDescr "SNMPv3 agent from Cisco Systems, Inc."

# Entry type: sysObjectID
# Entry format: OID
sysObjectID transpath

# Entry type: sysLocation
# Entry format: octetString
sysLocation "Herndon, Virginia"

# Entry type: sysContact
# Entry format: octetString
sysContact "Cisco Systems, Inc. +1 703 484 3000"

# Entry type: sysName
# Entry format: octetString
sysName "NSSU - MGC"

# Entry type: snmpEnableAuthenTraps
```

Sample Configured snmpd.cnf File

```

# Entry format: integer
snmpEnableAuthenTraps 1

# Entry type: MAX_THREADS
# Entry format: integer
MAX_THREADS 25

# Entry type: MAX_PDU_TIME
# Entry format: integer
MAX_PDU_TIME 80000

# Entry type: MAX_OUTPUT_WAITING
# Entry format: integer
MAX_OUTPUT_WAITING 65536

# Entry type: MAX_SUBAGENTS
# Entry format: integer
MAX_SUBAGENTS 15

# Entry type: subagent
# Entry format: octetString

#Entry type: snmpCommunityEntry
#Format: snmpCommunityIndex (text)
#      snmpCommunityName (text)
#      snmpCommunitySecurityName (text)
#      snmpCommunityContextEngineID (octetString)
#      snmpCommunityContextName (text)
#      snmpCommunityTransportTag (text)
#      snmpCommunityStorageType (nonVolatile, permanent, readOnly)
snmpCommunityEntry admin mgcusr mgcusr localSnmpID - - nonVolatile
snmpCommunityEntry readonly public public localSnmpID - - nonVolatile
snmpCommunityEntry user private private localSnmpID - - nonVolatile

# Entry type: communityEntry
# Entry format: srCommunityAuthSnmpID (snmpID)
#      srCommunityName (textOctetString)
#      srCommunityGroupName (textOctetString)
#      srCommunityContextSnmpID (snmpID)
#      srCommunityContextName (textOctetString)
#      srCommunityTransportLabel (textOctetString)
#      srCommunityMemoryType (integer)

# Entry type: snmpEngineBoots
# Entry format: integer
snmpEngineBoots 3

#Entry type: usmUserEntry
#Format: usmUserEngineID (octetString)
#      usmUserName (text)
#      usmUserAuthProtocol (OID)
#      usmUserPrivProtocol (OID)
#      usmUserStorageType (nonVolatile, permanent, readOnly)
#      usmTargetTag (text)
#      AuthKey (octetString)
#      PrivKey (octetString)

#Entry type: vacmAccessEntry
#Format: vacmGroupName (text)
#      vacmAccessContextPrefix (text)
#      vacmAccessSecurityModel (snmpv1, snmpv2c, snmpv2s, usm, http)
#      vacmAccessSecurityLevel (noAuthNoPriv, authNoPriv, authPriv)

```

```

#       vacmAccessContextMatch (exact, prefix)
#       vacmAccessReadViewName (text)
#       vacmAccessWriteViewName (text)
#       vacmAccessNotifyViewName (text)
#       vacmAccessStorageType (nonVolatile, permanent, readOnly)
vacmAccessEntry User - snmpv1 noAuthNoPriv exact All RemoteWrite All \
    nonVolatile
vacmAccessEntry User - snmpv2c noAuthNoPriv exact All RemoteWrite All \
    nonVolatile
vacmAccessEntry Guest - snmpv1 noAuthNoPriv exact All - All nonVolatile
vacmAccessEntry Guest - snmpv2c noAuthNoPriv exact All - All nonVolatile
vacmAccessEntry SuperUser - snmpv1 noAuthNoPriv exact All Write All \
    nonVolatile
vacmAccessEntry SuperUser - snmpv2c noAuthNoPriv exact All Write All \
    nonVolatile

#Entry type: vacmSecurityToGroupEntry
#Format: vacmSecurityModel (snmpv1, snmpv2c, snmpv2s, usm, http)
#       vacmSecurityName (text)
#       vacmGroupName (text)
#       vacmSecurityToGroupStorageType (nonVolatile, permanent, readOnly)
vacmSecurityToGroupEntry snmpv1 mgcusr SuperUser nonVolatile
vacmSecurityToGroupEntry snmpv1 public Guest nonVolatile
vacmSecurityToGroupEntry snmpv1 private User nonVolatile
vacmSecurityToGroupEntry snmpv2c mgcusr SuperUser nonVolatile
vacmSecurityToGroupEntry snmpv2c public Guest nonVolatile
vacmSecurityToGroupEntry snmpv2c private User nonVolatile

#Entry type: vacmViewTreeFamilyEntry
#Format: vacmViewTreeFamilyViewName (text)
#       vacmViewTreeFamilySubtree (OID)
#       vacmViewTreeFamilyMask (octetString)
#       vacmViewTreeFamilyType (included, excluded)
#       vacmViewTreeFamilyStorageType (nonVolatile, permanent, readOnly)
vacmViewTreeFamilyEntry All iso - included nonVolatile
vacmViewTreeFamilyEntry All 0.0 - included nonVolatile
vacmViewTreeFamilyEntry All hrSWRunEntry.0.2147483647 ff:df excluded \
    nonVolatile
vacmViewTreeFamilyEntry All hrSWRunPerfEntry.0.2147483647 ff:df excluded \
    nonVolatile
vacmViewTreeFamilyEntry Write iso - included nonVolatile
vacmViewTreeFamilyEntry Write mib_2 - excluded nonVolatile
vacmViewTreeFamilyEntry RemoteWrite iso - included nonVolatile
vacmViewTreeFamilyEntry RemoteWrite mib_2 - excluded nonVolatile
vacmViewTreeFamilyEntry RemoteWrite critAppProcEntry.0.1 ff:f7 excluded \
    nonVolatile
vacmViewTreeFamilyEntry RemoteWrite critAppProcEntry.0.2 ff:f7 excluded \
    nonVolatile
vacmViewTreeFamilyEntry RemoteWrite critAppProcEntry.0.3 ff:f7 excluded \
    nonVolatile
vacmViewTreeFamilyEntry RemoteWrite critAppProcEntry.0.4 ff:f7 excluded \
    nonVolatile

#Entry type: snmpNotifyEntry
#Format: snmpNotifyName (text)
#       snmpNotifyTag (text)
#       snmpNotifyType (trap(1), inform(2))
#       snmpNotifyStorageType (nonVolatile, permanent, readOnly)
snmpNotifyEntry 32 TrapSink trap nonVolatile

#Entry type: snmpTargetAddrEntry
#Format: snmpTargetAddrName (text)
#       snmpTargetAddrTDomain (snmpUDPDDomain, snmpIPXDomain, etc.)
#       snmpTargetAddrTAddress (transport address,i.e. 192.147.142.254:0)

```

```

#      snmpTargetAddrTimeout  (integer)
#      snmpTargetAddrRetryCount  (integer)
#      snmpTargetAddrTagList  (text)
#      snmpTargetAddrParams  (text)
#      snmpTargetAddrStorageType  (nonVolatile, permanent, readOnly)
#      snmpTargetAddrTMask  (transport mask, i.e. 255.255.255.255:0)
#      snmpTargetAddrMMS  (integer)
snmpTargetAddrEntry  34 snmpUDPDomain 127.0.0.1:0 100 3 TrapSink \
    v2cExampleParams nonVolatile 255.255.255.255:0 2048

#Entry type: snmpTargetParamsEntry
#Format:  snmpTargetParamsName  (text)
#      snmpTargetParamsMPModel  (integer)
#      snmpTargetParamsSecurityModel  (snmpv1, snmpv2c, snmpv2s, usm)
#      snmpTargetParamsSecurityName  (text)
#      snmpTargetParamsSecurityLevel  (noAuthNoPriv,authNoPriv,authPriv)
#      snmpTargetParamsStorageType  (nonVolatile, permanent, readOnly)
snmpTargetParamsEntry  v1ExampleParams 0 snmpv1 public noAuthNoPriv \
    nonVolatile
snmpTargetParamsEntry  v2cExampleParams 1 snmpv2c public noAuthNoPriv \
    nonVolatile

#Entry type: snmpNotifyFilterProfileEntry
#Format:  snmpTargetParamsName  (text)
#      snmpNotifyFilterProfileName  (text)
#      snmpNotifyFilterProfileStorageType  (nonVolatile,permanent,readOnly)

#Entry type: snmpNotifyFilterEntry
#Format:  snmpNotifyFilterProfileName  (text)
#      snmpNotifyFilterSubtree  (OID)
#      snmpNotifyFilterMask  (octetString)
#      snmpNotifyFilterType  (included, excluded)
#      snmpNotifyFilterStorageType  (nonVolatile, permanent, readOnly)

#Entry type: httpUserNameEntry
#Format:  httpUserName  (text)
#      httpUserGroupName  (text)
#      httpUserTransportLabel  (text)
#      httpUserStorageType  (nonVolatile, permanent, readOnly)
#      Password  (octetString)

```

Sample Configured XECfgParm.dat Files for Cisco PGW 2200 Softswitch Release 9.8(1)

The following sample XECfgParm.dat files for Cisco PGW 2200 Softswitch Release 9.8(1) are located in the **/opt/CiscoMGC/etc** directory.

```

# File:  XECfgParm.dat
# Copyright (c) 1997-2008 by Cisco Systems, Inc.
#
# Purpose:
#
# This file contains configuration parameters that may be accessed by
# XE application programs at run-time.
#
# All lines beginning with a '#' are comments and WILL NOT BE READ BY
# PROGRAMS.  Thus application overrides of the default parameter values
# can be easily added and removed by removing/added a '#'.
#

```

```

# Copyright (c) 1997-2008 by Cisco Systems, Inc.
#-----
# Default parameter values have a facility name of "*" and
# will be used if no match is found on a specific facility name
#-----
# Specific Facility names are as follows:
#
# logger      - Log Server
# foverd      - Failover Daemon
# MML         - MML
# procM       - Process Manager
# cdrDmper    - CDR Dumper
# cfgM        - Configuration Manager
# engine      - call processing engine
# ioChanMgr    - I/O Channel Managers
# pom         - Provisioning Object Manager
# measM       - Measurement Manager
# OPERSAGT    - Operational SNMP Agent
# PROVSAGT    - Provisioning SNMP Agent
# mmSAgt      - Measurement Manager SNMP Agent
# almM        - Alarm Manager
# replicator- Replicator
# mmdb        - TimesTen Main Memory Data Base Process
# amDmper     - Alarm / Measurement Dumper
# ioChanCtl   - controls all channel controllers
# SIP         - SIP IOCC's global configuration
#
#----Special Parameter Section----
# callver     - call verification utility
# diskmonitor - disk monitor shell script
# XE          - Execution Environment
#
#-----

#----- MGC Environment Configuration Tool Usage -----
#
#               REQUIRED STARTUP PARAMETERS
#               DO NOT MOVE THESE PARAMETERS BEYOND THIS BOX
*.platformId = 1
*.transpathId = 01 # Transpath Id for ASN
*.ownTranspathId = 01
*.peerTranspathId = 02
*.MGC_CDR_NODE_ID = MGC-CDR-NODE-STRING # System Id for CDR
*.desiredPlatformState = standalone
*.virtualFaultTolerant = false # avoid prov-dply/sync on FT mode in egw
*.SysConnectDataAccess = true # true, establish conn. to Data Access Subsystem
*.GWCclearChannelAlgorithm = null # clear channel algorithm
*.SipToIsupInterworkingInd = 0 # 0= No Interworking Encountered
# 1= Interworking Encountered
*.AlarmOnActive = false # true, raise an alarm when pgw is active

*.ipAddrLocalA = 10.0.49.43 # 0.0.0.0 # Should be same as
*.IP_Addr1
*.ipAddrLocalB = 0.0.0.0
*.ipAddrPeerA = 0.0.0.0 # Failover peer's address
*.ipAddrPeerB = 0.0.0.0

*.IP_Addr1 = 10.0.49.43 # 0.0.0.0 # Address of interface on
motherboard
*.IP_Addr2 = 0.0.0.0
*.IP_Addr3 = 0.0.0.0
*.IP_Addr4 = 0.0.0.0

# These are Next Hop (router) IP Addresses
# They should be used when the Next Hop address(es)

```

```

# are different on the two MGC hosts
*.IP_NextHop1 = 0.0.0.0
*.IP_NextHop2 = 0.0.0.0
*.IP_NextHop3 = 0.0.0.0
*.IP_NextHop4 = 0.0.0.0
*.IP_NextHop5 = 0.0.0.0
*.IP_NextHop6 = 0.0.0.0
*.IP_NextHop7 = 0.0.0.0
*.IP_NextHop8 = 0.0.0.0

*.netmaskPeerB = 255.255.255.255
*.netmaskPeerA = 255.255.255.255
*.netmaskLocalB = 255.255.255.255
*.netmaskLocalA = 255.255.255.255
*.Peer_NextHop1 = 0.0.0.0
*.Peer_NextHop2 = 0.0.0.0
*.Peer_NextHop3 = 0.0.0.0
*.Peer_NextHop4 = 0.0.0.0
*.Peer_NextHop5 = 0.0.0.0
*.Peer_NextHop6 = 0.0.0.0
*.Peer_NextHop7 = 0.0.0.0
*.Peer_NextHop8 = 0.0.0.0

#####
# Improved SIP Failover Support. Setting 0.0.0.0 to both will disable
# the SIP Improved failover support Feature. Configuring only one will
# cause the switchover, if the physical interface where it present fails.
#
*.Virtual_IP_Addr1 = 10.0.242.220 # 0.0.0.0 # Must be from *.IP_Addr1
Subnet.
*.Virtual_IP_Addr2 = 0.0.0.0 # Must be from *.IP_Addr2 Subnet.
#####

*.geoSeparation = false # Geographical separated? or not.

# To disable sip failover, you have to set both Virtual_IP_Addr* to 0.0.0.0.
# Set *.sipFailover=false does not always mean sip failover is disabled.
#
*.sipFailover = false # Failover if SIP Service fails.

*.stPort = 0
engine.SysVirtualSwitch = 1 # = 0 # 0=Nailed-Up, 1=Switched-MGC,
2=Switched-JCS
pom.dataSync = false # don't synch slave data with master
foverd.ipLocalPortA = 0
foverd.ipPeerPortA = 0
foverd.ipLocalPortB = 0
foverd.ipPeerPortB = 0
*.numberOfThreads = 2

#####
# Sub System component version
*.subSysCompVer = 12.a
#####

#-----
# CVT Parameters
#-----

#*.OwnClli = TTTT-SS-BB-XXX
#*.OwnClli = 1-22-33-444

#
REQUIRED STARTUP PARAMETERS

```



```

# DO NOT MOVE THESE PARAMETERS BEYOND THIS BOX
#----- MGC Environment Configuration Tool Usage -----

*.disableMeas =false           # T ==> Don't accumulate meas in shared mem
*.sm_meas_baseaddr = 40960

*.tempDir =                    /tmp      # temporary directory
*.dataDir =                    ../var    # volatile data directory
*.homeDirRoot =                /opt/CiscoMGC
*.logDirectory =               ../var/log # NEW log directory
*.logFileNamePrefix =          platform  # NEW log prefix
*.logPrio =                    Error
*.logMsgDrop =                 true
*.eventTrace =                 false
*.debugLevel =                 high
*.tablesFile =                 ../etc/tables.dat # tables that can be loaded
*.autonomous =                 false
*.runAsDaemon =                true
*.chkPtPort =                  2001
*.maxNumLinks =                32
*.maxLinksPerSessionSet =      4          # max links per SS7 sessionSet
*.maxNumDChansPerIOCC =        504
*.maxNumDChansPerPort =        2000
*.maxNumMGCPLinks =            1000
*.maxNumSIPLinks =             4
*.maxNumPril3IOCCs =           3
*.maxTrueOPCs =                6          # max true OPCs per MGC
*.maxCapOPCsPerTrueOPC = 8      # max cap OPCs per true OPC
*.maxNumRLMPorts =             8          # Maximum number of unique RLM ports
IUA.maxExtNodes =              256        # max number of External Nodes
                                         # with ISDNSIGTYPE of IUA
IUA.maxSigPathsPerExtNode =     112        # max number of SIGPATHs that can
                                         # be assigned an External Node
                                         # with ISDNSIGTYPE of IUA
IUA.maxSigPaths =              1500       # max number of IUA SIGPATHs
                                         # per MGC
M3UA.maxSgp =                  96          # Max number of M3UA SGPs
M3UA.maxSigServices =           1536       # Max number of M3UA signalling services
M3UA.maxOPCs =                  64          # Max number of M3UA OPCs
M3UA.maxRoutesPerOpcDpc =       2          # Max number of M3UA routes per OPC/DPC pair
SUA.maxSgp =                    8          # Max number of SUA SGPs
SUA.maxSigServices =            256        # Max number of SUA signalling services
SUA.maxOPCs =                   64          # Max number of SUA OPCs
SUA.maxRoutesPerOpcApcSSN =     2          # Max number of SUA routes per OPC/APC pair
and remote SSN
*.AllLinksFailCausesFailover = false      # Should loss of all C7/M3UA/SUA links cause
failover
*.AllISDNLinksFailCausesFailover = false   # Should loss of all ISDN/IUA/RLM links cause
failover
*.dataSourceName =              howdydb
*.dataCommitTime =              10         # in millisecs
*.OverdecadicDigitsSupported =   false     # keep it here for migration purpose only
*.DataBaseAccessError =         0          # 0 = Continue, 1 = Reject call
*.VirtualMemTimerInterval =     2000       # sampling frequency of virtual memory
*.MemAddressTimerInterval =     1500       # sampling frequency of memory address space of processes
*.CallRateTimerInterval =       1000      # sampling frequency of the call rate computations
*.CPUTimerInterval =            3000
*.CallCutoffTimer =             0          # call cutoff timer
*.CallCutoffTimerUnits =        0          # 0 = Hours, 1 = Minutes, 2 = Seconds
*.tibcoSupport =                disable    #disable/enable
*.PartialCliTypeOfSwitch =      0          #0 to 99
*.PartialCliPnoIdentity =       0          #0 to 999
*.PartialCliSwitchNumber =      0          #0 to 999
*.LISupport =                   disable    # disable/enable

```

```

*.PNPopulate = disable          # disable/enable
*.maxLocationLabels = 3000      # 0 to 3000
*.DisableCCBSoverTunneledQSIG = 0 # 0 = Enable, 1 = Disable
*.analysisCapabilityLevel = 0   # 0 = existing analysis behaviour, 1 = Longest-matching
capability enabled
*.FaxUpspeedCodecPreference = null # attempt passthrough if T.38 fax fails
*.MMLManualBlockingCic = 0      # 0 = not MML_Manual_BLOCK the cic when no RestartAck
received, 1 = MML_Manual_BLOCK the cic enabled
*.CallReleaseGuardTimer = 0    # call release guard timer

#-----
# TCAP Capabilities
#-----

TCAP.maxSsnNum = 10 # max number of local SSNs PGW supports, range [1..10]
TCAP.avgInvokePerDialog = 1 # max number of outgoing Invokes involved in one Dialog, range
[1..10]

#-----
# Log Server logfile locations
#-----

# daemonAddr is socket port for logger daemon
logger.daemonAddr = ../var/lsd_addr

# NEW logfile rotation size max in Megabytes
logger.fileRotateSize = 100

# NEW logfile rotation interval in minutes (24 hrs default)
logger.fileRotateInterval = 1440

# numThreads can be 0 or 1, if 1 then logger client runs in its
# own thread
logger.numThreads = 0

#-----
# Facility specific parameters
#   The remainder of this file pertains to parameters and parameter overrides
#   for individual facilities.
#
# LogPrio and autonomous are changed for debug testing only. Otherwise
# everyone should use the defaults above (except MML, see below.)
#-----

# Usage of these debug parameters could cause the system to use up
# space more rapidly than normal. If the DISK alarm is activated because
# of this activity, certain files in /opt/CiscoMGC/var/spool will be erased.

# To set the logging level for a particular process, the exact case-sensitive
# unix filename of the process must be used. Only the logging level of
# actively or passively managed processes can be set.
#
# Valid values for logPrio are Debug, Trace, Info, Warning, Error, and Critical
#
# almM.logPrio =          Debug
# amDmpr.logPrio =        Debug
# cdrDmpr.logPrio =        Debug
# cfgM.logPrio =          Debug
# EISUP.logPrio =          Debug
# ioChanMgr.logPrio =      Debug
# ISDNIP.logPrio =         Debug
# ISDNL3.logPrio =         Debug
# ISDNBRI.logPrio =        Debug
# IUA.logPrio =            Debug

```

```

# engine.logPrio =          Debug
# foverd.logPrio =         Debug
# M3UA.logPrio =           Debug
# measMgr.logPrio =        Debug
# MGCP.logPrio =           Debug
# H248.logPrio =           Debug
# mmdbd.logPrio =          Debug
# mmSAgt.logPrio =         Debug
# pom.logPrio =            Debug
# procM.logPrio =          Debug
# replicator.logPrio =     Debug
# sagt.logPrio =           Debug
# SIP.logPrio =            Debug
# SS7.logPrio =            Debug
# SUA.logPrio =            Debug
# TALI.logPrio =           Debug
# TCAP.logPrio =           Debug
# RA.logPrio =             Debug
# QBE_V5.logPrio =         Debug
# QBE_V6.logPrio =         Debug
QBE-IOCC.debugFlag =      0

# Specialized "autonomous" flags for debug, fault isolation
# engine.autonomous =      true
# cfgM.autonomous =        true
Talk2.autonomous =        false

#-----
# procM
#-----

procM.minCheckHealthInterval = 10      # smallest check health interval
procM.minCheckHealthTimeout = 20      # smallest check health timeout
procM.minKillGracePeriod = 5          # smallest kill grace period
procM.almDwellInterval = 15           # seconds to wait before clearing alarm
procM.procHealthDfltAlmCat = pmDefault # default alarm category for PM
procM.servicesDir = ../var            # location of PM temporary FIFOs
procM.servFmt = PM_%d_%d_input        # format of PM temporary FIFOs
procM.recovDbFile = ../var/procMRecovery # PM recovery info
procM.logDBFile = ../var/procMLogTable # log info for recovery only
procM.runAsDaemon = true

#-----
# cfgM
#-----

cfgM.recovDbFile = ../var/cfgMRecovery # CfgM recovery info

#-----
# Engine
#-----

engine.SysPropagateChanAvail = false   # auto-blocking of C7 cics and ISDN sigPaths
engine.SysGeneratedCode = true
engine.SysGRSTimerInterval = 0
engine.SysGRSBlockSize = 0
engine.SysSGCPRetryCount = 3           # max number of SGCP retry messages after failure
engine.SysSGCPRetryTimerInterval = 1000 # interval between retransmission (msec)
engine.SysCLlval = false
engine.SysToneDetect = false
engine.SysNumTrans = false
engine.SysMinOverlap = 0

```

```

engine.SysMaxOverlap = 28
engine.SysGSMTimerInterval = 10000      # GSM to be sent (milliseconds)
engine.LCMmdlFile = ../lib/lcm          # LSI call model
engine.CCMdlFile = ../lib/cc           # call context
engine.mdoDir = ../lib/                 # where .mdo files live
engine.VersionTimeoutValue = 10000      # Interval for version messages (msec)
engine.MDLANumberScreening = 0          # use calling party number for a number screening

engine.SysMdlMemoryReduction = 1
engine.CircuitReservation = false # Do/Don't use circuit reservation feature
engine.CallBackDBCleanUpTimer = 3600000 # Call Back DB clean up timer in mini seconds
(min:600000 to max:10800000 )
engine.SendHardwareBlock = false        # false=PGW will only send maintenance blocks

*.MaxNumTGAdvances = 1 # Limit on num Trunk Group Advance actions
*.RedirectingATree = 0
*.ClearingLocation = 0                # 0 = Normal mapping behaviour, LCM will not override
the Clearing Location field in Call Context
*.DefaultLocation = 0                # 0 = Normal protocol defined default value, LCM will
not override the Default Location field in Call Context
*.detailedCallEventCapture = 1
*.SelectTermCustGrpId = 0            # 1= Select Terminating SigPath CustGrpId if Originating
SigPath CustGrpId is 0000.
                                     # 0= Always select Originating SigPath CustGrpId
*.GlareReattemptCauseValue = 44      # used for re-attempt by GW in Nailed configurations.
*.DerivedInterworkingFCIBCIEnable = 0 # 1 = Set FCI/BCI values when interworking with
R2/T1CAS/ISDN/H323 V2

*.sipModeSelectionControl = 2 # = 2      # 1 - B2BUA mode, allow later selection of
proxy mode via the dialplan, 2 - Fixed Proxy mode, always work in proxy mode.
*.sipRoutingMode = 0 # 0 - strict-router, 1 - loose-router.

#The following two lines are call based memory allocator settings.
#set these to 0 to disable call-based memory allocator
#This setting is memory efficient, but performance suffers.
#set these to 110000 for maximum performance. Memory usage increases.
engine.CALL_MEM_BLOCK_SIZE = 65536
engine.CALL_MEM_CHUNK_SIZE = 56

# engine.SysTraceLevel = 3

*.LongCallTime = 21600000              # used to configure OnGoingCallTime in ms (6hrs
def)

engine.CDRencodingFormat = AnsiCDB
engine.CDRtimeStamp = M
engine.CDRmessageTypes = "1010,1020,1030,1040,1050,1060,1070"

engine.VersionTimeoutValue = 10000
engine.StartUpAuditEnabled = false     # audit invoked at engine startup?
engine.FaultRecoveryAuditTimer = 15000 # milliseconds

engine.CustSpecificINAPHandling = null
engine.DisableMultipleCDRs = 1         # 0=enable, 1=disable
engine.ChargingTariffType = 0          # 0=tariff-rate/scale-factor, 1=meter pulse
engine.ChargingMode = 1                # 1=AddOnCharge, 2=ReplaceCharge, 3=FreeOfCharge
engine.ShortDurationCallPeriod = 0     # 0=feature disabled
engine.ActionOnChargeTableAccessFailure = 0 # 0=continue call, 1=release call
engine.CallLimitingControl = 0         # 0 = Call limiting off, 1 = Call limiting on
#The following parameter is to set the call number, these calls will write their buffer
into trace file. default value: 200
engine.CallNumberToWriteIntoTracefile = 200
#-----
# CDR dumper (cdrDmpr)

```

```

#-----
cdrDmpr.openCDR          = true
cdrDmpr.seqFile          = ../var/.cdr.seq

#-----
# Alarms/Measurements dumper (amDmpr)
#-----

#-----
# ioChanMgr
#-----

# Internal debug - only use this for low-level IOS debug
# This is bitmapped hex value:
#   1 - Managed Object tracing
#   2 - Simulation of streams devices from /dev to ../dev for
#   unit testing.
ioChanMgr.trace =      0x0

# These timers are in millisecs
# NOTE:  alarms are sent autonomously as they occur, alarmTimer is outdated
# and should be set to zero.  If IPCTimer is 0, then hard-coded value will be
# used.  Only for problems with the hard-code should this value be changed.
ioChanMgr.alarmTimer =      0
ioChanMgr.statTimer   =      30000
ioChanMgr.IPCTimer    =      0

#Channel manager parameters for IPC flow control.
# evtTimer(msec.) - Frequency at which the queue is scanned for Msgs.
# hbTimer(msec.) - Heart-beat timer, Not yet implemented.
# statDiscardThreshold - Size of Control Queue that triggers discarding
#                       all the queued stat events.
# sendThreshold - Max. Number of Events from the Queue sent at a time.
# IPCsendThreshold - Max. Number of RSIPs from the Queue sent at a time.
ioChanMgr.evtTimer    =      100
ioChanMgr.hbTimer     =     1000
ioChanMgr.statDiscardThreshold =      40
ioChanMgr.sendThreshold =      10
ioChanMgr.IPCsendThreshold =      0

#Channel manager parameters for SCC switchover on MGX
# Both sessionPauseTimer and resumeAckTimer are in seconds.
ioChanMgr.sessionPauseTimer =      8
ioChanMgr.resumeAckTimer   =      1

# Channel manager parameter for amount of time that PDUs are held back
# in IOCC after recovery of SS7 sigserv, before forwarding to engine
ioChanMgr.IDUHoldTimer = 500

#-----
# ioChanCtl
#-----
ioChanCtl.DPNSSTestFrames = true
ioChanCtl.xgcpMultiThread = true      # enable threading for the IP receive loop in MGCP
ioChanCtl.ituIsNewZealand = false     # for New Zealand MTP3 set appropriate ITU
properties

#-----
# SIP
#-----
SIP.maxConnection = 200                # Maximum TCP connexctions supported by PGW
simultaneourly
SIP.connIdlePeriod = 43200             # How long one TCP connection coulbe be stay in idle
state in second. 0 means PGW never close idle connection

```

```

SIP.connLocalMsgQueueSize = 1500      # Maximum number of local outgoing messages per TCP
connection queue
SIP.udp2tcp_byte_xover = 0 # message size to control whether switch from UDP to TCP
SIP.naptr_record_locate = 1 # whether to perform natpr dns query
SIP.transportProtocol = udp # obsolete value, keep here to data migration

#-----
# measM
#-----
#
# Currently we assume 8000 XE meas objects fit into 8 Mb of shared memory.
#
measM.sm_seg_size = 32      # size of shared memory in MB (default is 32)
measM.loadBalanceFactor = 20 # num of measmgr distribution points every 5 minutes
measM.port = default      # port to sync dynamic meas thresholds

#-----
# almM
#-----
# almM.runAsDaemon = false

#-----
# MML - since this is started and stopped by user, it
#       has the following unique requirements for logging.
#       - to alter logging levels, the logPrio parameter
#       must be changed here, then the MML process
#       started to pick up the change. The set-log
#       command does not affect any MML processes
#
#       - Currently MML must ALWAYS have autonomous=true
#-----

MML.logPrio = Info          # causes Info and above messages to be written to the
log
MML.logFileNamePrefix = mml # causes MML messages to be diverted to mml.log

MML.autonomous = true
MML.runAsDaemon = false

MML.timeout=10000          # in milliseconds
#                          (note: current XE supports 1-second
resolution)
#
# individual timeout values for MML commands:
# format is: MML.<verb> = time
# (verb all lowercase)
MML.chg-cfg = 10000
MML.startPM = /etc/init.d/CiscoMGC start
MML.stopPM = /etc/init.d/CiscoMGC stop
MML.vld-cic = 25000
MML.snd = 600000
MML.enhancedHelpCompletion = true

#-----
# XE
#-----

#-----
# foverd
#-----

# NOTE: addresses below must be configured for the target system
#       - connTypes can be "socket", "serial", or "fifo"

```

```

# connection 1 parameters
foverd.conn1Type = socket

# connection 2 parameters
foverd.conn2Type = socket

# connection 3 parameters
foverd.conn3Type =      serial
foverd.conn3Addr =      /dev/null

foverd.heartbeatInterval = 1000
foverd.ackTimeout =      1000
foverd.abswitchTestInterval = 30000
foverd.graceShutTimeout = 6000
foverd.forceShutTimeout = 1000
foverd.commRetryInterval = 30000
foverd.statusRptInterval = 600000
foverd.peerCommTimeout = 3000
foverd.delayTimeout = 1000
foverd.transitionTimeout = 10000
foverd.abswitchPort = /dev/null
foverd.peerReestablishTimeout = 50000
foverd.garpInterval = 0      # 0: disable foverd function of sending garp periodically
                             # positive number : enable garp function

# -----
#foverd.runAsDaemon =      false
# -----
#foverd.logPrio      =      Info

#-----
# Network Element
#-----

product.vendor = "Cisco Systems, Inc."
product.version = "9.8(1)"
product.time = "....."

#-----
# POM - Provisioning Object Manager
#-----
pom.port      = default      # use port 4001 when set to default
pom.respTimeout = 1200000    # default respTimeout 20 minutes,

#-----
# Replicator
#-----
replicator.portDataChannelSend = 2968
replicator.portDataChannelRecv = 2970
replicator.portCommChannelSend = 2972
replicator.portCommChannelRecv = 2974
replicator.reconnectInterval = 15
replicator.numberReadThreads = 1      # optional thread (0=no threads,1=one thread)

#-----
# Audit properties
#-----

engine.AuditTimerInterval = 1000
engine.MaxAuditCics = 32

#-----
# INAP prepaid properties
#-----

```

```

engine.RelINAPCallsAfterSwOver = true

#-----
# Disk Monitor Parameters
#-----

diskmonitor.Limit      = 7      # Minimum number of days to preserve (Trimming only
occurs when threshold is exceeded. )
diskmonitor.Threshold  = 80      # percentage full threshold
diskmonitor.SoftLimit  = false   # set to true to allow override of preserve limit,
setting it to false does not affect log file removal, see also PreserveLogs setting.
diskmonitor.CdrRmFinished = 0    # remove "finished" cdrs after X days (0 = immediate)
diskmonitor.OptFileSys =         # list of optional filesystems to monitor (no trimming)
diskmonitor.CoreRmDays = 1      # number of days to keep the core files
diskmonitor.CfgRmDirs  = 64      # remove old config directories if more than X exist (0
= disable)
diskmonitor.logPrio = Info
diskmonitor.logFileNamePrefix = diskmonitor # causes log messages to be diverted to
diskmonitor.log
diskmonitor.TimerInterval = 60 # number of seconds before starting next task

#
# The next two parameters defines when old files should be removed.
# This task is run daily at dailyStartTime.
# Only core, log, cdr, alarm and measurements files are removed by this task.
#
diskmonitor.MaxKeepDays = 0 # maximum number of days to preserve files. use 0 to keep
forever.
diskmonitor.DailyStartTime = 04:15 # daily cleaning time (local time)
diskmonitor.PreserveLogs = false # if true and softlimit = false, log files will not be
removed even if threshold is crossed. Setting SoftLimit = true negates this setting
diskmonitor.PreserveCDRs = false # if true and softlimit = false, CDR files will not be
removed even if threshold is crossed. Setting SoftLimit = true negates this setting

#-----
# call verification utility Parameters
#-----
callver.SaveArea = ../etc/cust_specific/toolkit

#-----
# ISDNBRI
#-----
ISDNBRI.tcpPingPort = 0          # if port=0, it will disable ISDNBRI's tcp ping function.
                                # default value is 0.
                                # tcpPing will be enabled when set a valid port value,
                                # suggest value is 2430

#-----
# Radius Accounting Parameters
#-----
RadiusAccounting.output = off    # on/off
RadiusAccounting.numberPort = 20 # The number of local port to communicate with
radius server. The range is between 10 to 99. Default value is 20.
RadiusAccounting.smSize = 30     # size of shared memory in MB. The range is between
20 to 199. Default value is 30.

#-----
# H.248
#-----
H248.maxNumH248Links =          1000
H248.maximumActionsInTransaction = 64 # Used to set maximum number of actions in one
Transaction

```



```

H248.localMID = 0.0.0.0                # MGC Message Identifier. IP address or domain name
H248.MgcHeaderAddrType = 1            # MGC H.248 Message header type. 1=IP
Address,2=Domain Name
#-----
# End of XE Configuration Parameter File
#-----

MML.rtrv-callinfo = 30000

```

Sample Configured XECfgParm.dat Files for Cisco PGW 2200 Softswitch Release 9.7(3)

The following sample XECfgParm.dat files for Cisco PGW 2200 Softswitch Release 9.7(3) are located in the `/opt/CiscoMGC/etc` directory.

```

# File: XECfgParm.dat
# Copyright (c) 1997-2007 by Cisco Systems, Inc.
#
# Purpose:
#
# This file contains configuration parameters that may be accessed by
# XE application programs at run-time.
#
# All lines beginning with a '#' are comments and WILL NOT BE READ BY
# PROGRAMS. Thus application overrides of the default parameter values
# can be easily added and removed by removing/added a '#'.
#
# Copyright (c) 1997-2007 by Cisco Systems, Inc.
#-----
# Default parameter values have a facility name of "*" and
# will be used if no match is found on a specific facility name
#-----
# Specific Facility names are as follows:
#
# logger      - Log Server
# foverd      - Failover Daemon
# MML         - MML
# procM       - Process Manager
# cdrDmpr     - CDR Dumper
# cfgM        - Configuration Manager
# engine      - call processing engine
# ioChanMgr   - I/O Channel Managers
# pom         - Provisioning Object Manager
# measM       - Measurement Manager
# OPERSAGT    - Operational SNMP Agent
# PROVSAGT    - Provisioning SNMP Agent
# mmSAgt      - Measurement Manager SNMP Agent
# almM        - Alarm Manager
# replicator  - Replicator
# mmdb        - TimesTen Main Memory Data Base Process
# amDmpr      - Alarm / Measurement Dumper
# ioChanCtl   - controls all channel controllers
#
#----Special Parameter Section----
# callver     - call verification utility
# diskmonitor - disk monitor shell script
# XE          - Execution Environment
#
#-----

```

```

#----- MGC Environment Configuration Tool Usage -----
#
#           REQUIRED STARTUP PARAMETERS
#           DO NOT MOVE THESE PARAMETERS BEYOND THIS BOX
*.platformId = 1
*.transpathId = 01 # MIGRATED
*.ownTranspathId = 01 # MIGRATED
*.peerTranspathId = 02 # MIGRATED
*.MGC_CDR_NODE_ID = MGC-CDR-NODE-STRING # MIGRATED
*.desiredPlatformState = master # MIGRATED
*.virtualFaultTolerant = false # avoid prov-dply/sync on FT mode in egw
*.SysConnectDataAccess = true # MIGRATED
*.GWClearChannelAlgorithm = null # MIGRATED
*.SipToIsupInterworkingInd = 0 # MIGRATED
# 1= Interworking Encountered

*.ipAddrLocalA = 10.0.49.116 # MIGRATED
*.ipAddrLocalB = 0.0.0.0 # MIGRATED
*.ipAddrPeerA = 10.0.49.119 # MIGRATED
*.ipAddrPeerB = 0.0.0.0 # MIGRATED

*.IP_Addr1 = 10.0.49.116 # MIGRATED
*.IP_Addr2 = 0.0.0.0 # MIGRATED
*.IP_Addr3 = 0.0.0.0 # MIGRATED
*.IP_Addr4 = 0.0.0.0 # MIGRATED

# These are Next Hop (router) IP Addresses
# They should be used when the Next Hop address(es)
# are different on the two MGC hosts
*.IP_NextHop1 = 0.0.0.0 # MIGRATED
*.IP_NextHop2 = 0.0.0.0 # MIGRATED
*.IP_NextHop3 = 0.0.0.0 # MIGRATED
*.IP_NextHop4 = 0.0.0.0 # MIGRATED
*.IP_NextHop5 = 0.0.0.0 # MIGRATED
*.IP_NextHop6 = 0.0.0.0 # MIGRATED
*.IP_NextHop7 = 0.0.0.0 # MIGRATED
*.IP_NextHop8 = 0.0.0.0 # MIGRATED

*.netmaskPeerB = 255.255.255.255
*.netmaskPeerA = 255.255.255.255
*.netmaskLocalB = 255.255.255.255
*.netmaskLocalA = 255.255.255.255
*.Peer_NextHop1 = 0.0.0.0
*.Peer_NextHop2 = 0.0.0.0
*.Peer_NextHop3 = 0.0.0.0
*.Peer_NextHop4 = 0.0.0.0
*.Peer_NextHop5 = 0.0.0.0
*.Peer_NextHop6 = 0.0.0.0
*.Peer_NextHop7 = 0.0.0.0
*.Peer_NextHop8 = 0.0.0.0

#####
# Improved SIP Failover Support. Setting 0.0.0.0 to both will disable
# the SIP Improved failover support Feature. Configuring only one will
# cause the switchover, if the physical interface where it present fails.
#
*.Virtual_IP_Addr1 = 0.0.0.0 # MIGRATED
*.Virtual_IP_Addr2 = 0.0.0.0 # MIGRATED
#####

*.geoSeparation = false # MIGRATED

# To disable sip failover, you have to set both Virtual_IP_Addr* to 0.0.0.0.

```

```

# Set *.sipFailover = true      # MIGRATED
#
*.sipFailover = true          # MIGRATED

*.stPort = 0                  # MIGRATED
engine.SysVirtualSwitch = 1    # MIGRATED
pom.dataSync = true           # MIGRATED
foverd.ipLocalPortA = 1051     # MIGRATED
foverd.ipPeerPortA = 1052      # MIGRATED
foverd.ipLocalPortB = 1053     # MIGRATED
foverd.ipPeerPortB = 1054      # MIGRATED
*.numberOfThreads = 2

#####
# Sub System component version
*.subSysCompVer = 11.a
#####

#-----
# CVT Parameters
#-----

#*.OwnClli = TTTT-SS-BB-XXX
#*.OwnClli = 1-22-33-444

#
#                      REQUIRED STARTUP PARAMETERS
#                      DO NOT MOVE THESE PARAMETERS BEYOND THIS BOX
#----- MGC Environment Configuration Tool Usage -----

*.disableMeas = false         # MIGRATED
*.sm_meas_baseaddr = 40960

*.tempDir =                   /tmp      # temporary directory
*.dataDir =                   ../var    # volatile data directory
*.homeDirRoot =               /opt/CiscoMGC
*.logDirectory = ..../var/log         # MIGRATED
*.logFileNamePrefix = platform      # MIGRATED
*.logPrio = Error               # MIGRATED
*.logMsgDrop =                  true
*.eventTrace =                  false
*.debugLevel =                  high
*.tablesFile =                  ../etc/tables.dat # tables that can be loaded
*.autonomous =                  false
*.runAsDaemon =                 true
*.chkPtPort = 2001             # MIGRATED
*.maxNumLinks = 32             # MIGRATED
*.maxLinksPerSessionSet = 4      # MIGRATED
*.maxNumDChansPerIOCC = 504      # MIGRATED
*.maxNumDChansPerPort = 1000     # MIGRATED
*.maxNumMGCPLinks = 1000        # MIGRATED
*.maxNumSIPLinks = 4
*.maxNumPril3IOCCs = 3          # MIGRATED
*.maxTrueOPCs = 6               # max true OPCs per MGC
*.maxCapOPCsPerTrueOPC = 8      # max cap OPCs per true OPC
*.maxNumRLMPorts = 8           # MIGRATED
IUA.maxExtNodes = 256           # max number of External Nodes
                                # with ISDNSIGTYPE of IUA
IUA.maxSigPathsPerExtNode = 112 # max number of SIGPATHs that can
                                # be assigned an External Node
                                # with ISDNSIGTYPE of IUA
IUA.maxSigPaths = 1500          # max number of IUA SIGPATHs
                                # per MGC
M3UA.maxSgp = 96                # Max number of M3UA SGPs
M3UA.maxSigServices = 1536      # Max number of M3UA signalling services

```

```

M3UA.maxOPCs = 64 # Max number of M3UA OPCs
M3UA.maxRoutesPerOpCpC = 2 # Max number of M3UA routes per OPC/DPC pair
SUA.maxSgp = 8 # Max number of SUA SGPs
SUA.maxSigServices = 256 # Max number of SUA signalling services
SUA.maxOPCs = 64 # Max number of SUA OPCs
SUA.maxRoutesPerOpCpCpSSN = 2 # Max number of SUA routes per OPC/APC pair
and remote SSN
*.AllLinksFailCausesFailover = false # MIGRATED
*.AllISDNLinksFailCausesFailover = false # MIGRATED
*.dataSourceName = howdydb # MIGRATED
*.dataCommitTime = 10 # MIGRATED
*.OverdecadicDigitsSupported = false # MIGRATED
*.DataBaseAccessError = 0 # MIGRATED
*.VirtualMemTimerInterval = 2000 # sampling frequency of virtual memory
*.MemAddressTimerInterval = 1500 # sampling frequency of memory address space of processes
*.CallRateTimerInterval = 1000 # sampling frequency of the call rate computations
*.CPUTimerInterval = 3000
*.CallCutoffTimer = 0 # MIGRATED
*.tibcoSupport = disable # MIGRATED
*.PartialCliTypeOfSwitch = 0 # MIGRATED
*.PartialCliPnoIdentity = 0 # MIGRATED
*.PartialCliSwitchNumber = 0 # MIGRATED
*.LISupport = enable # MIGRATED
*.PNPopulate = disable # MIGRATED
*.maxLocationLabels = 3000 # MIGRATED
*.DisableCCBSoverTunneledQSIG = 0 # 0 = Enable, 1 = Disable
*.analysisCapabilityLevel = 0 # MIGRATED
*.FaxUpspeedCodecPreference = null # MIGRATED
*.MMLManualBlockingCic = 0 # MIGRATED
*.CallReleaseGuardTimer = 0 # MIGRATED

TCAP.maxSsnNum = 10 # max number of local SSN PGW supports, range [1..10]

#-----
# Log Server logfile locations
#-----

# daemonAddr is socket port for logger daemon
logger.daemonAddr = ../var/lsd_addr

# NEW logfile rotation size max in Megabytes
logger.fileRotateSize = 100

# NEW logfile rotation interval in minutes (24 hrs default)
logger.fileRotateInterval = 1440

# numThreads can be 0 or 1, if 1 then logger client runs in its
# own thread
logger.numThreads = 0

#-----
# Facility specific parameters
# The remainder of this file pertains to parameters and parameter overrides
# for individual facilities.
#
# LogPrio and autonomous are changed for debug testing only. Otherwise
# everyone should use the defaults above (except MML, see below.)
#-----

# Usage of these debug parameters could cause the system to use up
# space more rapidly than normal. If the DISK alarm is activated because
# of this activity, certain files in /opt/CiscoMGC/var/spool will be erased.

# To set the logging level for a particular process, the exact case-sensitive

```

```

# unix filename of the process must be used. Only the logging level of
# actively or passively managed processes can be set.
#
# Valid values for logPrio are Debug, Trace, Info, Warning, Error, and Critical
#
# almM.logPrio =          Debug
# amDmpr.logPrio =        Debug
# cdrDmpr.logPrio =        Debug
# cfgM.logPrio =          Debug
#   EISUP.logPrio =        Debug
# ioChanMgr.logPrio =      Debug
# ISDNIP.logPrio =         Debug
# ISDNL3.logPrio =         Debug
# ISDNBRI.logPrio =        Debug
# IUA.logPrio =           Debug
#   engine.logPrio =       Debug
# foverd.logPrio =         Debug
# M3UA.logPrio =           Debug
# measMgr.logPrio =        Debug
# MGCP.logPrio =           Debug
# H248.logPrio =           Debug
# mmdbd.logPrio =          Debug
# mmSAgt.logPrio =         Debug
# pom.logPrio =            Debug
# procM.logPrio =          Debug
# replicator.logPrio =     Debug
# sagt.logPrio =           Debug
# SIP.logPrio =            Debug
# SS7.logPrio =            Debug
# SUA.logPrio =            Debug
# TALI.logPrio =           Debug
# TCAP.logPrio =           Debug
# RA.logPrio =             Debug
# QBE_V5.logPrio =         Debug
# QBE_V6.logPrio =         Debug
QBE-IOCC.debugFlag = 0    # MIGRATED

# Specialized "autonomous" flags for debug, fault isolation
# engine.autonomous =      true
# cfgM.autonomous =        true
Talk2.autonomous =                false

#-----
# procM
#-----

procM.minCheckHealthInterval = 10      # smallest check health interval
procM.minCheckHealthTimeout = 20      # smallest check health timeout
procM.minKillGracePeriod = 5          # smallest kill grace period
procM.almDwellInterval = 15           # seconds to wait before clearing alarm
procM.procHealthDfltAlmCat = pmDefault # default alarm category for PM
procM.servicesDir = ../var            # location of PM temporary FIFOs
procM.servFmt = PM_%d_%d_input        # format of PM temporary FIFOs
procM.recovDbFile = ../var/procMRecovery # PM recovery info
procM.logDBFile = ../var/procMLogTable # log info for recovery only
procM.runAsDaemon = true

#-----
# cfgM
#-----

cfgM.recovDbFile = ../var/cfgMRecovery # CfgM recovery info

```

```

#-----
# Engine
#-----

engine.SysPropagateChanAvail = false      # MIGRATED
engine.SysGeneratedCode = true
engine.SysGRSTimerInterval = 0            # MIGRATED
engine.SysGRSBlockSize = 0               # MIGRATED
engine.SysSGCPRetryCount = 3              # max number of SGCP retry messages after failure
engine.SysSGCPRetryTimerInterval = 1000   # interval between retransmission (msec)
engine.SysCLIval = false
engine.SysToneDetect = false
engine.SysNumTrans = false
engine.SysMinOverlap = 0
engine.SysMaxOverlap = 28
engine.SysGSMTimerInterval = 10000       # MIGRATED
engine.LCMmdlFile = ../lib/lcm            # LSI call model
engine.CCMdlFile = ../lib/cc              # call context
engine.mdoDir = ../lib/                   # where .mdo files live
engine.VersionTimeoutValue = 10000        # Interval for version messages (msec)
engine.MDLANumberScreening = 0            # MIGRATED

engine.SysMdlMemoryReduction = 1
engine.CircuitReservation = false         # MIGRATED
engine.CallBackDBCleanUpTimer = 3600000   # MIGRATED
engine.SendHardwareBlock = false          # MIGRATED

*.MaxNumTGAdvances = 1                   # MIGRATED
*.RedirectingATree = 0
*.ClearingLocation = 0                   # MIGRATED
*.DefaultLocation = 0                    # MIGRATED
*.detailedCallEventCapture = 1           # MIGRATED
*.SelectTermCustGrpId = 0                # MIGRATED
                                           # 0= Always select Originating SigPath CustGrpId
*.GlareReattemptCauseValue = 44          # MIGRATED
*.DerivedInterworkingFCIBCIEnable = 0    # MIGRATED

*.sipModeSelectionControl = 2             # 1 - B2BUA mode, allow later selection of proxy mode
                                           # via the dialplan, 2 - Fixed Proxy mode, always work in proxy mode.

#The following two lines are call based memory allocator settings.
#set these to 0 to disable call-based memory allocator
#This setting is memory efficient, but performance suffers.
#set these to 110000 for maximum performance. Memory usage increases.
engine.CALL_MEM_BLOCK_SIZE = 65536
engine.CALL_MEM_CHUNK_SIZE = 4096

# engine.SysTraceLevel = 3

*.LongCallTime = 21600000                 # used to configure OnGoingCallTime in ms (6hrs
def)

engine.CDRencodingFormat = ItuCDB         # MIGRATED
engine.CDRtimeStamp = S                   # MIGRATED
engine.CDRmessageTypes = "1010,1020,1030,1040,1050,1060,1070" # MIGRATED

engine.VersionTimeoutValue = 10000
engine.StartUpAuditEnabled = false        # MIGRATED
engine.FaultRecoveryAuditTimer = 15000    # MIGRATED

engine.CustSpecificINAPHandling = null    # MIGRATED
engine.DisableMultipleCDRs = 1            # MIGRATED
engine.ChargingTariffType = 0              # MIGRATED

```

```

engine.ChargingMode = 1      # MIGRATED
engine.ShortDurationCallPeriod = 0    # MIGRATED
engine.ActionOnChargeTableAccessFailure = 0    # MIGRATED
engine.CallLimitingControl = 0    # MIGRATED
#-----
# CDR dumper (cdrDmpr)
#-----
cdrDmpr.openCDR          = true
cdrDmpr.seqFile          = ../var/.cdr.seq

#-----
# Alarms/Measurements dumper (amDmpr)
#-----

#-----
# ioChanMgr
#-----

# Internal debug - only use this for low-level IOS debug
# This is bitmapped hex value:
#   1 - Managed Object tracing
#   2 - Simulation of streams devices from /dev to ../dev for
#   unit testing.
ioChanMgr.trace =      0x0

# These timers are in millisecs
# NOTE:  alarms are sent autonomously as they occur, alarmTimer is outdated
# and should be set to zero.  If IPCTimer is 0, then hard-coded value will be
# used.  Only for problems with the hard-code should this value be changed.
ioChanMgr.alarmTimer =      0
ioChanMgr.statTimer   =      30000
ioChanMgr.IPCTimer = 0      # MIGRATED

#Channel manager parameters for IPC flow control.
# evtTimer(msec.) - Frequency at which the queue is scanned for Msgs.
# hbTimer(msec.) - Heart-beat timer, Not yet implemented.
# statDiscardThreshold - Size of Control Queue that triggers discarding
#                       all the queued stat events.
# sendThreshold - Max. Number of Events from the Queue sent at a time.
# IPCsendThreshold - Max. Number of RSIPs from the Queue sent at a time.
ioChanMgr.evtTimer   =      100
ioChanMgr.hbTimer    =      1000
ioChanMgr.statDiscardThreshold =      40
ioChanMgr.sendThreshold =      10
ioChanMgr.IPCsendThreshold = 0      # MIGRATED

#Channel manager parameters for SCC switchover on MGX
# Both sessionPauseTimer and resumeAckTimer are in seconds.
ioChanMgr.sessionPauseTimer = 8      # MIGRATED
ioChanMgr.resumeAckTimer = 1      # MIGRATED

# Channel manager parameter for amount of time that PDUs are held back
# in IOCC after recovery of SS7 sigserv, before forwarding to engine
ioChanMgr.IDUHoldTimer = 500

#-----
# ioChanCtl
#-----
ioChanCtl.DPNSSTestFrames = true
ioChanCtl.xgcpMultiThread = true      # enable threading for the IP receive loop in MGCP
ioChanCtl.ituIsNewZealand = false      # for New Zealand MTP3 set appropriate ITU
properties

#-----

```

```

# measM
#-----
#
# Currently we assume 8000 XEMeas objects fit into 8 Mb of shared memory.
#
measM.sm_seg_size = 32      # size of shared memory in MB (default is 32)
measM.loadBalanceFactor = 20 # num of measmgr distribution points every 5 minutes
measM.port = default      # port to sync dynamic meas thresholds

#-----
# almM
#-----
# almM.runAsDaemon = false

#-----
# MML - since this is started and stopped by user, it
#       has the following unique requirements for logging.
#       - to alter logging levels, the logPrio parameter
#         must be changed here, then the MML process
#         started to pick up the change. The set-log
#         command does not affect any MML processes
#
#       - Currently MML must ALWAYS have autonomous=true
#-----

MML.logPrio = Info          # causes Info and above messages to be written to the
log
MML.logFileNamePrefix = mml # causes MML messages to be diverted to mml.log

MML.autonomous = true
MML.runAsDaemon = false

MML.timeout = 10000        # MIGRATED
#                               (note: current XE supports 1-second
resolution)
#
# individual timeout values for MML commands:
# format is: MML.<verb> = time
# (verb all lowercase)
MML.chg-cfg = 10000
MML.startPM = /etc/init.d/CiscoMGC start
MML.stopPM = /etc/init.d/CiscoMGC stop
MML.vld-cic = 25000
MML.snd = 600000
MML.enhancedHelpCompletion = true # MIGRATED

#-----
# XE
#-----

#-----
# foverd
#-----

# NOTE: addresses below must be configured for the target system
#       - connTypes can be "socket", "serial", or "fifo"

# connection 1 parameters
foverd.conn1Type = socket # MIGRATED

# connection 2 parameters
foverd.conn2Type = socket # MIGRATED

# connection 3 parameters

```



```

foverd.conn3Type =      serial
foverd.conn3Addr =      /dev/null

foverd.heartbeatInterval = 1000
foverd.ackTimeout =      1000
foverd.abswitchTestInterval = 30000
foverd.graceShutTimeout = 6000
foverd.forceShutTimeout = 1000
foverd.commRetryInterval = 30000
foverd.statusRptInterval = 600000
foverd.peerCommTimeout = 3000
foverd.delayTimeout =    1000
foverd.transitionTimeout = 10000
foverd.abswitchPort = /dev/null # MIGRATED
foverd.peerReestablishTimeout = 50000
foverd.garpInterval = 0 # MIGRATED
                        # positive number : enable garp function

# -----
#foverd.runAsDaemon =      false
# -----
#foverd.logPrio      =      Info

#-----
# Network Element
#-----

product.vendor = "Cisco Systems, Inc."
product.version = "9.7(3)"
product.time = "....."

#-----
# POM - Provisioning Object Manager
#-----
pom.port      = default # use port 4001 when set to default
pom.respTimeout = 1200000 # MIGRATED

#-----
# Replicator
#-----
replicator.portDataChannelSend = 2968 # MIGRATED
replicator.portDataChannelRecv = 2970 # MIGRATED
replicator.portCommChannelSend = 2972 # MIGRATED
replicator.portCommChannelRecv = 2974 # MIGRATED
replicator.reconnectInterval = 15
replicator.numberReadThreads = 1 # optional thread (0=no threads,1=one thread)

#-----
# Audit properties
#-----

engine.AuditTimerInterval = 1000 # MIGRATED
engine.MaxAuditCics = 32 # MIGRATED

#-----
# INAP prepaid properties
#-----

engine.RelINAPCallsAfterSwOver = true # MIGRATED

#-----
# Disk Monitor Parameters
#-----

```

```

diskmonitor.Limit = 7      # MIGRATED
diskmonitor.Threshold = 80 # MIGRATED
diskmonitor.SoftLimit = false # MIGRATED
diskmonitor.CdrRmFinished = 0 # MIGRATED
diskmonitor.OptFileSys =      # list of optional filesystems to monitor (no trimming)
diskmonitor.CoreRmDays = 1    # MIGRATED
diskmonitor.CfgRmDirs = 64    # MIGRATED
diskmonitor.logPrio = Info
diskmonitor.logFileNamePrefix = diskmonitor # causes log messages to be diverted to
diskmonitor.log
diskmonitor.TimerInterval = 60 # number of seconds before starting next task

#
# The next two parameters defines when old files should be removed.
# This task is run daily at dailyStartTime.
# Only core, log, cdr, alarm and measurements files are removed by this task.
#
diskmonitor.MaxKeepDays = 0 # maximum number of days to preserve files. use 0 to keep
forever.
diskmonitor.DailyStartTime = 04:15 # daily cleaning time (local time)
diskmonitor.PreserveLogs = false # if true and softlimit = false, log files will not be
removed even if threshold is crossed. Setting SoftLimit = true negates this setting
diskmonitor.PreserveCDRs = false # MIGRATED

#-----
# call verification utility Parameters
#-----
callver.SaveArea = ../etc/cust_specific/toolkit

#-----
# ISDNBRI
#-----
ISDNBRI.tcpPingPort = 0 # MIGRATED
                        # default value is 0.
                        # tcpPing will be enabled when set a valid port value,
                        # suggest value is 2430

#-----
# Radius Accounting Parameters
#-----
RadiusAccounting.output = off # on/off
RadiusAccounting.numberPort = 20 # The number of local port to communicate with
radius server. The range is between 10 to 99. Default value is 20.
RadiusAccounting.smSize = 30 # size of shared memory in MB. The range is between
20 to 199. Default value is 30.

#-----
# H.248
#-----
H248.maxNumH248Links = 1000
H248.maximumActionsInTransaction = 64 # Used to set maximum number of actions in one
Transaction
H248.localMID = [CISCO.COM] # Used in message from PGW to GW
#-----
# End of XE Configuration Parameter File
#-----

*.CallCutoffTimerUnits = 0 # This property specifies how the callcutofftime property is
calculated.
                        # If the value is set to,
                        0: callcutofftime property is measured in hours;
                        1: callcutofftime property is measured in minutes;
                        2: callcutofftime property is measured in seconds.

```

Default value: 0

Sample Configured XECfgParm.dat Files for Cisco PGW 2200 Softswitch Release 9.6(1)

The following sample XECfgParm.dat files for Cisco PGW 2200 Softswitch Release 9.6(1) are located in the `/opt/CiscoMGC/etc` directory.

```
# File: XECfgParm.dat
#
# Purpose:
#
# This file contains configuration parameters that may be accessed by
# XE application programs at run-time.
#
# All lines beginning with a '#' are comments and WILL NOT BE READ BY
# PROGRAMS. Thus application overrides of the default parameter values
# can be easily added and removed by removing/added a '#'.
#
#-----
# Default parameter values have a facility name of "*" and
# will be used if no match is found on a specific facility name
#-----
# Specific Facility names are as follows:
#
# logger      - Log Server
# foverd      - Failover Daemon
# MML         - MML
# procM       - Process Manager
# cdrDmpr     - CDR Dumper
# cfgM        - Configuration Manager
# engine      - call processing engine
# ioChanMgr   - I/O Channel Managers
# pom         - Provisioning Object Manager
# measM       - Measurement Manager
# OPERSAGT    - Operational SNMP Agent
# PROVSAGT    - Provisioning SNMP Agent
# mmSAGt      - Measurement Manager SNMP Agent
# almM        - Alarm Manager
# replicator  - Replicator
# mmdb        - TimesTen Main Memory Data Base Process
# amDmpr      - Alarm / Measurement Dumper
# ioChanCtl   - controls all channel controllers
#
#----Special Parameter Section----
# callver     - call verification utility
# diskmonitor - disk monitor shell script
# XE          - Execution Environment
#
#-----

#----- MGC Environment Configuration Tool Usage -----
#
#               REQUIRED STARTUP PARAMETERS
#
#               DO NOT MOVE THESE PARAMETERS BEYOND THIS BOX
*.platformId = 1
*.transpathId = 01 # Transpath Id for ASN
*.ownTranspathId = 01
*.peerTranspathId = 02
*.MGC_CDR_NODE_ID = BUTTERFLY-HENDRIX-NODE # System Id for CDR
```

```

*.desiredPlatformState =          master
*.virtualFaultTolerant =          false    # avoid prov-dply/sync on FT mode in egw
*.SysConnectDataAccess =          true     # true, establish conn. to Data Access
Subsystem
*.GWClearChannelAlgorithm =        null     # clear channel algorithm
*.SipToIsupInterworkingInd =        0       # 0= No Interworking Encountered
                                           # 1= Interworking Encountered

*.ipAddrLocalA = 10.0.1.160        # MIGRATED
*.ipAddrLocalB = 10.128.1.5        # MIGRATED
*.ipAddrPeerA = 10.0.1.161        # MIGRATED
*.ipAddrPeerB = 10.128.1.6        # MIGRATED

*.IP_Addr1 = 10.0.1.160          # MIGRATED
*.IP_Addr2 = 10.128.1.5          # MIGRATED
*.IP_Addr3 = 10.82.82.11         # MIGRATED
*.IP_Addr4 = 0.0.0.0            # MIGRATED

# These are Next Hop (router) IP Addresses
# They should be used when the Next Hop address(es)
# are different on the two MGC hosts
*.IP_NextHop1 =                  0.0.0.0
*.IP_NextHop2 =                  0.0.0.0
*.IP_NextHop3 =                  0.0.0.0
*.IP_NextHop4 =                  0.0.0.0
*.IP_NextHop5 =                  0.0.0.0
*.IP_NextHop6 =                  0.0.0.0
*.IP_NextHop7 =                  0.0.0.0
*.IP_NextHop8 =                  0.0.0.0

#####
# Improved SIP Failover Support. Setting 0.0.0.0 to both will disable
# the SIP Improved failover support Feature. Configuring only one will
# cause the switchover, if the physical interface where it present fails.
#
*.Virtual_IP_Addr1 =              0.0.0.0   # Must be from *.IP_Addr1 Subnet.
*.Virtual_IP_Addr2 =              0.0.0.0   # Must be from *.IP_Addr2 Subnet.
#####

*.geoSeparation =                false      # Geographical separated? or not.
*.sipFailover =                  false      # Failover if SIP Service fails.

*.stPort = 7001                  # MIGRATED
engine.SysVirtualSwitch = 0      # MIGRATED
pom.dataSync = true              # MIGRATED
foverd.ipLocalPortA = 1052       # MIGRATED
foverd.ipPeerPortA = 1051        # MIGRATED
foverd.ipLocalPortB = 1054       # MIGRATED
foverd.ipPeerPortB = 1053        # MIGRATED
*.numberOfThreads = 1
#####
# Sub System component version
*.subSysCompVer = 10.a
#####

#-----
# CVT Parameters
#-----

#*.OwnClli = TTTT-SS-BB-XXX
#*.OwnClli = 1-22-33-444

#
#                               REQUIRED STARTUP PARAMETERS

```

```

# DO NOT MOVE THESE PARAMETERS BEYOND THIS BOX
#----- MGC Environment Configuration Tool Usage -----

*.disableMeas = false                # T ==> Don't accumulate meas in shared mem
*.sm_meas_baseaddr = 3400            # shared memory based address

*.tempDir =                          /tmp      # temporary directory
*.dataDir =                          ../var    # volatile data directory
*.homeDirRoot =                      /opt/CiscoMGC
*.logDirectory =                     ../var/log # NEW log directory
*.logFileNamePrefix =                platform  # NEW log prefix
*.logPrio =                          Debug
*.logMsgDrop =                       true
*.eventTrace =                       false
*.debugLevel =                       high
*.tablesFile =                       ../etc/tables.dat # tables that can be loaded
*.autonomous =                       false
*.runAsDaemon =                      true
*.chkPtPort =                        2001
*.maxNumLinks =                      32
*.maxLinksPerSessionSet =            4          # max links per SS7 sessionSet
*.maxNumDChansPerIOCC =              504
*.maxNumDChansPerPort =              2000
*.maxNumMGCPLinks =                  1000
*.maxNumSIPLinks =                   4
*.maxTrueOPCs =                      6          # maxtrue OPCs
per MGC
*.maxCapOPCsPerTrueOPC =              8          # max cap OPCs per true
OPC
*.maxNumRLMPorts = 8                 # Maximum number of unique RLM ports
IUA.maxExtNodes =                    256         # max number of External Nodes
                                           # with ISDNSIGTYPE of IUA
IUA.maxSigPathsPerExtNode =          112         # max number of SIGPATHs that can
                                           # be assigned an External Node
                                           # with ISDNSIGTYPE of IUA
IUA.maxSigPaths =                    1500        # max number of IUA SIGPATHs
                                           # per MGC
M3UA.maxSgp = 96                     # Max number of M3UA SGPs
M3UA.maxSigServices =                1536        # Max number of M3UA signalling services
M3UA.maxOPCs =                       64          # Max number of M3UA OPCs
M3UA.maxRoutesPerOpcDpc =             2          # Max number of M3UA routes per OPC/DPC pair
SUA.maxSgp = 8                       # Max number of SUA SGPs
SUA.maxSigServices =                 256         # Max number of SUA signalling services
SUA.maxOPCs =                       64          # Max number of SUA OPCs
SUA.maxRoutesPerOpcApcSSN =           2          # Max number of SUA routes per OPC/APC pair
and remote SSN
*.AllLinksFailCausesFailover =       false     # Should loss of all C7/M3UA/SUA links cause
failover
*.dataSourceName =                   howdydb
*.dataCommitTime =                   10         # in millisecs
*.OverdecadicDigitsSupported =       false     # keep it here for migration purpose only
*.DataBaseAccessError =              0         # 0 = Continue, 1 = Reject call
*.VirtualMemTimerInterval =          2000      # sampling frequency of virtual memory
*.MemAddressTimerInterval =          1500      # sampling frequency of memory
address space of processes
*.CallRateTimerInterval =            1000      # sampling frequency of the call
rate computations
*.CPUTimerInterval = 3000
*.CallCutoffTimer =                  0          # call cutoff timer (hours)
*.tibcoSupport =                     disable    #disable/enable
*.PartialCliTypeOfSwitch = 0          #0 to 99
*.PartialCliPnoIdentity = 0          #0 to 999
*.PartialCliSwitchNumber = 0         #0 to 999
*.LISupport = disable                # disable/enable

```

```

*.maxLocationLabels = 3000          # 0 to 3000
#-----
# Log Server logfile locations
#-----

# daemonAddr is socket port for logger daemon
logger.daemonAddr = ../var/lsd_addr

# NEW logfile rotation size max in Megabytes
logger.fileRotateSize = 100

# NEW logfile rotation interval in minutes (24 hrs default)
logger.fileRotateInterval = 1440

# numThreads can be 0 or 1, if 1 then logger client runs in its
# own thread
logger.numThreads = 0

#-----
# Facility specific parameters
# The remainder of this file pertains to parameters and parameter overrides
# for individual facilities.
#
# LogPrio and autonomous are changed for debug testing only. Otherwise
# everyone should use the defaults above (except MML, see below.)
#-----

# Usage of these debug parameters could cause the system to use up
# space more rapidly than normal. If the DISK alarm is activated because
# of this activity, certain files in /opt/CiscoMGC/var/spool will be erased.

# To set the logging level for a particular process, the exact case-sensitive
# unix filename of the process must be used. Only the logging level of
# actively or passively managed processes can be set.
#
# Valid values for logPrio are Debug, Trace, Info, Warning, Error, and Critical
#
# almM.logPrio =          Debug
# amDmpr.logPrio =        Debug
# cdrDmpr.logPrio =        Debug
# cfgM.logPrio =          Debug
# EISUP.logPrio =          Debug
# ioChanMgr.logPrio =      Debug
# ISDNIP.logPrio =         Debug
# ISDNL3.logPrio =         Debug
# ISDNBRI.logPrio =        Debug
# IUA.logPrio =            Debug
# engine.logPrio =         Debug
# foverd.logPrio =         Debug
# M3UA.logPrio =           Debug
# measMgr.logPrio =        Debug
# MGCP.logPrio =           Debug
# mmdbd.logPrio =          Debug
# mmSAgt.logPrio =         Debug
# pom.logPrio =            Debug
# procM.logPrio =          Debug
# replicator.logPrio =     Debug
# sagt.logPrio =           Debug
# SIP.logPrio =            Debug
# SS7.logPrio =            Debug
# SUA.logPrio =            Debug
# TALI.logPrio =           Debug
# TCAP.logPrio =           Debug
QBE-IOCC.debugFlag =      0

```

```

# Specialized "autonomous" flags for debug, fault isolation
# engine.autonomous = true
# cfgM.autonomous = true
Talk2.autonomous = false

#-----
# procM
#-----

procM.minCheckHealthInterval = 10 # smallest check health interval
procM.minCheckHealthTimeout = 20 # smallest check health timeout
procM.minKillGracePeriod = 5 # smallest kill grace period
procM.almDwellInterval = 15 # seconds to wait before clearing alarm
procM.procHealthDfltAlmCat = pmDefault # default alarm category for PM
procM.servicesDir = ../var # location of PM temporary FIFOs
procM.servFmt = PM_%d_%d_input # format of PM temporary FIFOs
procM.recovDbFile = ../var/procMRecovery # PM recovery info
procM.logDBFile = ../var/procMLogTable # log info for recovery only
procM.runAsDaemon = true

#-----
# cfgM
#-----

cfgM.recovDbFile = ../var/cfgMRecovery # CfgM recovery info

#-----
# Engine
#-----

engine.SysPropagateChanAvail = false # auto-blocking of C7 cics and ISDN sigPaths
engine.SysGeneratedCode = true
engine.SysGRSTimerInterval = 0
engine.SysGRSBlockSize = 0
engine.SysSGCPRetryCount = 3 # max number of SGCP retry messages after failure
engine.SysSGCPRetryTimerInterval = 1000 # interval between retransmission (msec)
engine.SysCLIval = false
engine.SysToneDetect = false
engine.SysNumTrans = false
engine.SysMinOverlap = 0
engine.SysMaxOverlap = 28
engine.SysGSMTimerInterval = 10000 # GSM to be sent (milliseconds)
engine.LCMMdlFile = ../lib/lcm # LSI call model
engine.CCMdlFile = ../lib/cc # call context
engine.mdoDir = ../lib/ # where .mdo files live
engine.VersionTimeoutValue = 10000 # Interval for version messages (msec)
engine.MDLANumberScreening = 0 # use calling party number for a number screening

engine.SysMdlMemoryReduction = 1
engine.CircuitReservation = false # Do/Don't use circuit reservation feature
engine.CallBackDBCleanUpTimer = 3600000 # Call Back DB clean up timer in mini seconds
(min:600000 to max:10800000 )

*.MaxNumTGAdvances = 1 # Limit on num Trunk Group Advance actions
*.RedirectingATree = 0
*.ClearingLocation = 0 # 0 = Normal mapping behaviour, LCM will not override
the Clearing Location field in Call Context
*.DefaultLocation = 0 # 0 = Normal protocol defined default value, LCM will
not override the Default Location field in Call Context
*.detailedCallEventCapture = 1

```

```

*.SelectTermCustGrpId = 0          # 1= Select Terminating SigPath CustGrpId if Originating
SigPath CustGrpId is 0000.

                                # 0= Always select Originating SigPath CustGrpId
*.GlareReattemptCauseValue = 44   # used for re-attempt by GW in Nailed configurations.
*.DerivedInterworkingFCIBCIEnable = 0 # 1 = Set FCI/BCI values when interworking with
R2/T1CAS/ISDN/H323 V2

#The following two lines are call based memory allocator settings.
#set these to 0 to disable call-based memory allocator
#This setting is memory efficient, but performance suffers.
#set these to 110000 for maximum performance. Memory usage increases.
engine.CALL_MEM_BLOCK_SIZE = 0
engine.CALL_MEM_CHUNK_SIZE = 0

# engine.SysTraceLevel = 3

*.LongCallTime = 21600000         # used to configure OnGoingCallTime in ms (6hrs
def)

engine.CDRencodingFormat = AnsiCDB
engine.CDRtimeStamp = S
engine.CDRmessageTypes = "1010,1020,1030,1040,1050,1060,1070,1210,1260"

engine.VersionTimeoutValue = 10000
engine.StartUpAuditEnabled = false # audit invoked at engine startup?
engine.FaultRecoveryAuditTimer = 15000 # milliseconds

engine.CustSpecificINAPHHandling = null
engine.DisableMultipleCDRs = 1     # 0=enable, 1=disable
engine.ChargingTariffType = 0      # 0=tariff-rate/scale-factor, 1=meter pulse
engine.ChargingMode = 1            # 1=AddOnCharge, 2=ReplaceCharge, 3=FreeOfCharge
engine.ShortDurationCallPeriod = 0 # 0=feature disabled
engine.ActionOnChargeTableAccessFailure = 0 # 0=continue call, 1=releasecall
engine.CallLimitingControl = 0     # 0 = Call limiting off, 1 = Call limiting on
#-----
# CDR dumper (cdrDmpr)
#-----
cdrDmpr.openCDR = true
cdrDmpr.seqFile = ../var/.cdr.seq

#-----
# Alarms/Measurements dumper (amDmpr)
#-----

#-----
# ioChanMgr
#-----

# Internal debug - only use this for low-level IOS debug
# This is bitmapped hex value:
# 1 - Managed Object tracing
# 2 - Simulation of streams devices from /dev to ../dev for
# unit testing.
ioChanMgr.trace = 0x0

# These timers are in millisecs
# NOTE: alarms are sent autonomously as they occur, alarmTimer is outdated
# and should be set to zero. If IPCTimer is 0, then hard-coded value will be
# used. Only for problems with the hard-code should this value be changed.
ioChanMgr.alarmTimer = 0
ioChanMgr.statTimer = 30000
ioChanMgr.IPCTimer = 0

#Channel manager parameters for IPC flow control.

```



```

# evtTimer(msec.) - Frequency at which the queue is scanned for Msgs.
# hbTimer(msec.) - Heart-beat timer, Not yet implemented.
# statDiscardThreshold - Size of Control Queue that triggers discarding
#                       all the queued stat events.
# sendThreshold - Max. Number of Events from the Queue sent at a time.
# IPCsendThreshold - Max. Number of RSIPs from the Queue sent at a time.
ioChanMgr.evtTimer = 100
ioChanMgr.hbTimer = 1000
ioChanMgr.statDiscardThreshold = 40
ioChanMgr.sendThreshold = 10
ioChanMgr.IPCsendThreshold = 0

#Channel manager parameters for SCC switchover on MGX
# Both sessionPauseTimer and resumeAckTimer are in seconds.
ioChanMgr.sessionPauseTimer = 8
ioChanMgr.resumeAckTimer = 1

#-----
# ioChanCtl
#-----
ioChanCtl.DPNSSTestFrames = true
ioChanCtl.xgcpMultiThread = true # enable threading for the IP receive loop in MGCP
ioChanCtl.ituIsNewZealand = false # for New Zealand MTP3 set appropriate ITU
properties

#-----
# measM
#-----
#
# Currently we assume 8000 XEMeas objects fit into 8 Mb of shared memory.
#
measM.sm_seg_size = 32 # size of shared memory in MB (default is 32)
measM.loadBalanceFactor = 20 # num of measmgr distribution points every 5 minutes
measM.port = default # port to sync dynamic meas thresholds

#-----
# almM
#-----
# almM.runAsDaemon = false

#-----
# MML - since this is started and stopped by user, it
#       has the following unique requirements for logging.
#       - to alter logging levels, the logPrio parameter
#       must be changed here, then the MML process
#       started to pick up the change. The set-log
#       command does not affect any MML processes
#
#       - Currently MML must ALWAYS have autonomous=true
#-----

MML.logPrio = Info # causes Info and above messages to be written to the
log
MML.logFileNamePrefix = mml # causes MML messages to be diverted to mml.log

MML.autonomous = true
MML.runAsDaemon = false

MML.timeout=10000 # in milliseconds
# (note: current XE supports 1-second
resolution)
#
# individual timeout values for MML commands:
# format is: MML.<verb> = time

```

```

# (verb all lowercase)
MML.chg-cfg = 10000
MML.startPM = /etc/init.d/CiscoMGC start
MML.stopPM = /etc/init.d/CiscoMGC stop
MML.vld-cic = 25000
MML.snd = 600000
MML.enhancedHelpCompletion = true

#-----
# XE
#-----

#-----
# foverd
#-----

# NOTE: addresses below must be configured for the target system
# - connTypes can be "socket", "serial", or "fifo"

# connection 1 parameters
foverd.conn1Type = socket

# connection 2 parameters
foverd.conn2Type = socket

# connection 3 parameters
foverd.conn3Type = serial
foverd.conn3Addr = /dev/null

foverd.heartbeatInterval = 1000
foverd.ackTimeout = 1000
foverd.abswitchTestInterval = 30000
foverd.graceShutTimeout = 6000
foverd.forceShutTimeout = 1000
foverd.commRetryInterval = 30000
foverd.statusRptInterval = 600000
foverd.peerCommTimeout = 3000
foverd.delayTimeout = 1000
foverd.transitionTimeout = 10000
foverd.abswitchPort = /dev/null
foverd.peerReestablishTimeout = 50000

# -----
#foverd.runAsDaemon = false
# -----
#foverd.logPrio = Info

#-----
# Network Element
#-----

product.vendor = "Cisco Systems, Inc."
product.version = "9.6(1)"
product.time = "...."

#-----
# POM - Provisioning Object Manager
#-----
pom.port = default # use port 4001 when set to default

#-----
# Replicator
#-----
replicator.portDataChannelSend = 2968

```

```

replicator.portDataChannelRecv = 2970
replicator.portCommChannelSend = 2972
replicator.portCommChannelRecv = 2974
replicator.reconnectInterval = 15
replicator.numberReadThreads = 1          # optional thread (0=no threads,1=one thread)

#-----
# Audit properties
#-----

engine.AuditTimerInterval = 1000
engine.MaxAuditCics = 32

#-----
# INAP prepaid properties
#-----

engine.RelINAPCallsAfterSwOver = true

#-----
# Disk Monitor Parameters
#-----

diskmonitor.Limit      = 7          # Minimum number of days to preserve (Trimming only
occurs when threshold is exceeded.  There is no maximum number of days to preserve.)
diskmonitor.Threshold  = 80         # percentage full threshold
diskmonitor.SoftLimit  = false      # set to true to allow override of preserve limit
diskmonitor.CdrRmFinished = 0      # remove "finished" cdrs after X days (0 = immediate)
diskmonitor.OptFileSys =           # list of optional filesystems to monitor (notrimming)
diskmonitor.CoreRmDays = 1         # number of days to keep the core files
diskmonitor.CfgRmDirs = 64         # remove old config directories if more than X exist (0
= disable)

#-----
# call verification utility Parameters
#-----
callver.SaveArea = ../etc/cust_specific/toolkit

#-----
# End of XE Configuration Parameter File
#-----

*.Peer_NextHop7=0.0.0.0
*.Peer_NextHop8=0.0.0.0
*.netmaskLocalA=255.255.255.255
*.netmaskLocalB=255.255.255.255
*.netmaskPeerA=255.255.255.255
*.netmaskPeerB=255.255.255.255
*.Peer_NextHop1=0.0.0.0
*.Peer_NextHop2=0.0.0.0
*.Peer_NextHop3=0.0.0.0
*.Peer_NextHop4=0.0.0.0
*.Peer_NextHop5=0.0.0.0
*.CallCutoffTimerUnits=0
*.Peer_NextHop6=0.0.0.0
*.PNPopulate = disable
foverd.garpInterval = 0
engine.SendHardwareBlock = false
*.maxNumPri13IOCCs = 3
*.FaxUpspeedCodecPreference = null
ISDNBRI.tcpPingPort = 0
*.MMLManualBlockingCic = 0
*.analysisCapabilityLevel = 0

```

```
MML.rtrv-callinfo = 30000
*.AllISDNLinksFailCausesFailover = false
diskmonitor.PreserveCDRs = false
pom.respTimeout = 1200000
*.AlarmOnActive = false
bash-2.03$
```



APPENDIX E

Sample Uninstall Scripts

This appendix contains sample outputs from the following section, [Removing a Cisco PGW 2200 Softswitch Software Version: Sample Output for uninstall.sh](#), page E-1.

Removing a Cisco PGW 2200 Softswitch Software Version: Sample Output for uninstall.sh

You must stop running the Cisco PGW 2200 Softswitch software and quit all the MML sessions before you uninstall the Cisco PGW 2200 Softswitch software.

The following is a sample output from the uninstall script.

```
# cd /cdrom/cdrom0
# ./uninstall.sh
#####
# READ CAREFULLY BEFORE PROCEEDING!!!
# This uninstall will allow the user to return to the last good installation by
# answering "NO" to the following question. You MAY NOT install an arbitrary earlier
# version of the software without experiencing fatal install problems. If you do
# return to the last good install prior to the current install, you will lose any
# provisioning work you may have performed on the current software install.
#####
```



Note Answer **y** to the following question if this uninstallation is for a software upgrade; answer **n** if the uninstallation is to fall back or back out to the previous software version.

```
Is the uninstall being done in order to upgrade to a new version of the
software? [y] [y,n,?,q] y
```

```
Use supplied admin file for unattended removal? [n] [y,n,?,q] y
Removal of <CSCOGt001> was successful.
sctpmmod not loaded
```

```
Removal of <CSCOGd004> was successful.
Removing /opt/CiscoMGC/etc/migrate/migrate.dat
Removing /opt/CiscoMGC/etc/migrate/migrate_4_5
Removing /opt/CiscoMGC/etc/migrate/migrate_5_6
Removing /opt/CiscoMGC/etc/migrate/migrate_6_7
Removing /opt/CiscoMGC/etc/migrate/migrate_7.0001_7.0002
Removing /opt/CiscoMGC/etc/migrate/migrate_7.0001_7.1
Removing /opt/CiscoMGC/etc/migrate/migrate_7.0002_7.1
Removing /opt/CiscoMGC/etc/migrate/migrate_7.0003_7.1
```

Removing a Cisco PGW 2200 Softswitch Software Version: Sample Output for uninstall.sh

```

Removing /opt/CiscoMGC/etc/migrate/migrate_7.0004_7.1
Removing /opt/CiscoMGC/etc/migrate/migrate_7.0005_7.1006
Removing /opt/CiscoMGC/etc/migrate/migrate_7.0_7.0001
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1001_7.1002
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1002_7.1003
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1003_7.1004
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1004_7.1005
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1005_7.1006
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1006_8.0
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1006_8.0.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1007_7.1008
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1008_8.0
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1008_8.0.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1009_8.0
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1009_8.0.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1010_8.0001
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1010_8.0001.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1_7.1001
Removing /opt/CiscoMGC/etc/migrate/migrate_7.1_7.1001.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_8.0001_9.0
Removing /opt/CiscoMGC/etc/migrate/migrate_8.0001_9.0001
Removing /opt/CiscoMGC/etc/migrate/migrate_8.0_9.0
Removing /opt/CiscoMGC/etc/migrate/migrate_9.0001_9.0002
Removing /opt/CiscoMGC/etc/migrate/migrate_9.0002_9.0003
Removing /opt/CiscoMGC/etc/migrate/migrate_9.0003_9.1
Removing /opt/CiscoMGC/etc/migrate/migrate_9.0003_9.1.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_9.0_9.0001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.1001_9.1002
Removing /opt/CiscoMGC/etc/migrate/migrate_9.1002_9.2
Removing /opt/CiscoMGC/etc/migrate/migrate_9.1_9.1001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.1_9.1002
Removing /opt/CiscoMGC/etc/migrate/migrate_9.2001_9.2002
Removing /opt/CiscoMGC/etc/migrate/migrate_9.2002_9.2003
Removing /opt/CiscoMGC/etc/migrate/migrate_9.2003_9.3
Removing /opt/CiscoMGC/etc/migrate/migrate_9.2_9.2001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.3001_9.4001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.3001_9.4001.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_9.3_9.3001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.4001_9.5001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.4001_9.5001.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_9.5001_9.5002
Removing /opt/CiscoMGC/etc/migrate/migrate_9.5002_9.6001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.5002_9.6001.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_9.6001_9.7001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.7001_9.7002
Removing /opt/CiscoMGC/etc/migrate/migrate_9.7001_9.7002.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_9.7002_9.7003
Removing /opt/CiscoMGC/etc/migrate/migrate_9.7002_9.7003.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_9.7003_9.8001
Removing /opt/CiscoMGC/etc/migrate/migrate_9.7003_9.8001.sql
Removing /opt/CiscoMGC/etc/migrate/migrate_XECfgParm
Removing /opt/CiscoMGC/etc/migrate/migrate_db_to_91.sh
Uninstalling /opt/CiscoMGC/etc/migrate/migrate_scr.tar.gz
Removing /opt/CiscoMGC/etc/CONFIG_LIB/4.0_to_5.0/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/4.0_to_5.0/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/4.0_to_5.0/dependencies.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/4.0_to_5.0/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/4.0_to_5.0/propLookUp.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/4.0_to_5.0/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/5.0_to_6.0/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/5.0_to_6.0/alarmCats.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/5.0_to_6.0/compTypes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/5.0_to_6.0/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/5.0_to_6.0/propSet.mod

```

```
Removing /opt/CiscoMGC/etc/CONFIG_LIB/5.0_to_6.0/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/5.0_to_6.0/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/alarmCats.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/compTypes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/dependencies.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/measCats.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/6.0_to_7.0/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.0002/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.0002/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.0002/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.0002/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.1/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.1/compTypes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.1/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.1/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0001_to_7.1/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0002_to_7.1/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0002_to_7.1/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0002_to_7.1/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0002_to_7.1/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0003_to_7.1/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0003_to_7.1/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0003_to_7.1/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0003_to_7.1/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0004_to_7.1/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0004_to_7.1/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0004_to_7.1/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0004_to_7.1/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0005_to_7.1006/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0005_to_7.1006/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0005_to_7.1006/dependencies.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0005_to_7.1006/procGroups.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0005_to_7.1006/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0005_to_7.1006/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0_to_7.0001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0_to_7.0001/alarmCats.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0_to_7.0001/compTypes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0_to_7.0001/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0_to_7.0001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0_to_7.0001/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.0_to_7.1/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1001_to_7.1002/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1001_to_7.1002/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1001_to_7.1002/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1002_to_7.1003/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1002_to_7.1003/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1003_to_7.1004/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1003_to_7.1004/dependencies.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1003_to_7.1004/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1003_to_7.1004/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1004_to_7.1005/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1004_to_7.1005/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1004_to_7.1005/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1005_to_7.1006/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1005_to_7.1006/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1006_to_8.0/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1006_to_8.0/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1006_to_8.0/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1007_to_7.1008/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1007_to_7.1008/properties.mod
```

```

Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1008_to_8.0/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1008_to_8.0/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1009_to_8.0/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1009_to_8.0/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1010_to_8.0001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1010_to_8.0001/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1010_to_8.0001/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1010_to_8.0001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1_to_7.1001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1_to_7.1001/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1_to_7.1001/dependencies.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1_to_7.1001/procGroups.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1_to_7.1001/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.1_to_7.1001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.2_to_9.1/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/7.2_to_9.1/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0001_to_9.0/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0001_to_9.0/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0001_to_9.0/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0001_to_9.0001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0001_to_9.0001/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0001_to_9.0001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0_to_9.0/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0_to_9.0/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/8.0_to_9.0/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0001_to_9.0002/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0001_to_9.0002/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0002_to_9.0003/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0002_to_9.0003/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0003_to_9.1/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0003_to_9.1/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0003_to_9.1/accRespCat.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0_to_9.0001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.0_to_9.0001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.1001_to_9.1002/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.1001_to_9.1002/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.1002_to_9.2/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.1002_to_9.2/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.1_to_9.1001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.1_to_9.1001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.1_to_9.1002/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.1_to_9.1002/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.2001_to_9.2002/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.2001_to_9.2002/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.2002_to_9.2003/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.2002_to_9.2003/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.2003_to_9.3/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.2003_to_9.3/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.2_to_9.2001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.3001_to_9.4001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.3001_to_9.4001/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.3001_to_9.4001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.3_to_9.3001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.3_to_9.3001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.4001_to_9.5001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.4001_to_9.5001/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.4001_to_9.5001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.5001_to_9.5002/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.5001_to_9.5002/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.5001_to_9.5002/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.5002_to_9.6001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.5002_to_9.6001/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.5002_to_9.6001/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.5002_to_9.6001/properties.mod

```



```
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.6001_to_9.7001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.6001_to_9.7001/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7001_to_9.7002/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7001_to_9.7002/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7002_to_9.7003/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7002_to_9.7003/properties.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7002_to_9.7003/components.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7002_to_9.7003/dependencies.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7002_to_9.7003/processes.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7002_to_9.7003/services.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7002_to_9.7003/dmprSink.mod
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7003_to_9.8/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7003_to_9.8001/
Removing /opt/CiscoMGC/etc/CONFIG_LIB/9.7003_to_9.8001/properties.mod
Uninstalling /opt/CiscoMGC/etc/CONFIG_LIB/migrate_mod.tar.gz

Removal of <CSC0gc001> was successful.
Uninstalling /opt/tibrv/tibco.tar.gz
Uninstalling /opt/CiscoMGC/lib/perl5/5.00503.tar.gz

Removal of <CSC0ga006> was successful.
Uninstalling /opt/Toolkit/tcl/tcl.tar.gz
Uninstalling /opt/Toolkit/bytecode/tv/tv.tar.gz
Uninstalling /opt/Toolkit/bytecode/toolbar/toolbar.tar.gz
Uninstalling /opt/Toolkit/bytecode/log/Viewer.tar.gz
Uninstalling /opt/Toolkit/bytecode/cdr/cdr.tar.gz
Uninstalling /opt/Toolkit/bytecode/am/am.tar.gz
Uninstalling /opt/Toolkit/bytecode/XECfg/XECfg.tar.gz
Uninstalling /opt/Toolkit/Packages/Packages.tar.gz

Removal of <CSC0ga004> was successful.
Killed

Removal of <CSC0ga003> was successful.
/opt/CiscoMGC/etc/CONFIG_LIB/INSTALL-9.8.1/install_status
Sun Microsystems Inc. SunOS 5.10 Generic January 2005
Exporting database contents for DSN=howdydb into /opt/CiscoMGC/etc/export.ttdb
Backup started ...
Backup complete
Successful backup, uninstall continuing
Creating ttMigrate file
Sun Microsystems Inc. SunOS 5.10 Generic January 2005

Saving table CISCO.ANNOUNCEMENT
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.A_CHARGE_ORIGIN
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.A_NUMBERDIALPLANSELECTION
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.BLACKLIST_A
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.BLACKLIST_B
```

```
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.CBBOOKINGINFO
Saving index CISCO.CBBOOKINGINFO_IDX1
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.CBMONITORINGINFO
Saving index CISCO.CBMONITORINGINFO_IDX1
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.CLIIPADDRESS
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.CLIPREFIX
Saving index CISCO.CLIPREFIX_IDX1
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.CMDGROUP
Saving rows...
191/191 rows saved.
Table successfully saved.

Saving table CISCO.DESTTRANS
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.FULLNUMBERTRANSLATION
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.H323IDDIVFROM
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.LIENTRIES
Saving index CISCO.LIENTRIES_IDX1
Saving index CISCO.LIENTRIES_IDX2
Saving rows...
0/0 rows saved.
Table successfully saved.

Saving table CISCO.NAMEDINPUTPARAMS
Saving index CISCO.NAMEDINIDX1
Saving rows...
608/608 rows saved.
Table successfully saved.

Saving table CISCO.NAMEDOUTPUTPARAMS
Saving index CISCO.NAMEDOUTIDX1
Saving rows...
260/260 rows saved.
```

```
Table successfully saved.

Saving table CISCO.NAMEDSQL
  Saving index CISCO.NAMEDSQLIX1
  Saving rows...
  150/150 rows saved.
Table successfully saved.

Saving table CISCO.NUMBERTERM
  Saving index CISCO.NUMBERTERM_IDX1
  Saving rows...
  0/0 rows saved.
Table successfully saved.

Saving table CISCO.PORTEDNUMBERS
  Saving index CISCO.PORTEDNUMBERS_TREE_IDX
  Saving rows...
  0/0 rows saved.
Table successfully saved.

Saving table CISCO.ROUTESELECTION
  Saving rows...
  0/0 rows saved.
Table successfully saved.

Saving table CISCO.SCHEMA_VERSION
  Saving rows...
  6/6 rows saved.
Table successfully saved.

Saving table CISCO.SCRIPT
  Saving rows...
  0/0 rows saved.
Table successfully saved.

Saving table CISCO.SOURCEBLACK
  Saving rows...
  0/0 rows saved.
Table successfully saved.

Saving table CISCO.WHITELIST_A
  Saving rows...
  0/0 rows saved.
Table successfully saved.

Saving table CISCO.WHITELIST_B
  Saving rows...
  0/0 rows saved.
Table successfully saved.
Successful ttMigrate, uninstall continuing
Stopping TimesTen...
The tt60 daemon has stopped successfully.
Removing directories and files...
Modifying /etc/syslog.conf

Removal of <CSCOGa002> was successful.

Removal of <CSCOGa001> was successful.

Removal of <CSCOGa000> was successful.
Modifying /etc/init.d/inetinit

Removal of <CSCOgu000> was successful.
```

```
Removal of <CSC000000> was successful.  
Removal of <CSC001000> was successful.  
Removal of <CSC002000> was successful.  
Removal of <CSC010000> was successful.  
Removal of <CSC020000> was successful.  
Removal of <CSC030000> was successful.  
Removal of <CSC031000> was successful.  
Removal of <CSC032000> was successful.  
Removal of <CSC033000> was successful.  
Removal of <CSC040000> was successful.  
Removal of <CSC041000> was successful.  
Removal of <CSC042000> was successful.  
Removal of <CSC050000> was successful.  
Removal of <CSC060000> was successful.  
Removal of <CSC070000> was successful.  
Removal of <CSC071000> was successful.  
Removal of <CSC080000> was successful.  
Uninstallation log can be found in /var/adm/MGC_uninstall.log
```



APPENDIX **F**

Sample LAN Configurations

This appendix contains sample configurations for two LAN switches, Cisco Catalyst 5500 A and Cisco Catalyst 5500 B, and the route switch modules.

Sample Configuration for Cisco Catalyst 5500 A

To view the current configuration of the Cisco Catalyst 5500 A, type the following command in privileged mode, and press **Enter**:

```
Catalyst_5513A (enable) show config
```

Output similar to the following appears:

```
begin
!
#version 4.5(1)
!
set password $1$l30o$QUT/nALYZH/WFmDoJqWAW0
set enablepass $1$tTCB$rbEX8KRDtTpVG9gsy7jc61
set prompt Catalyst_5513A
set length 24 default
set logout 20
set banner motd ^C^C
!
#system
set system baud 9600
set system modem disable
set system name Catalyst_5513A
set system location Lab1
set system contact Jim Smith 913 555-7998
!
#snmp
set snmp community read-only public
set snmp community read-write private
set snmp community read-write-all public
set snmp rmon disable
set snmp trap enable module
set snmp trap enable chassis
set snmp trap enable bridge
set snmp trap enable repeater
set snmp trap enable vtp
set snmp trap enable auth
set snmp trap enable ippermit
set snmp trap enable vmps
set snmp trap enable entity
```

```

set snmp trap enable config
set snmp trap enable stpx
set snmp trap enable syslog
set snmp extendedrmon vlanmode disable
set snmp extendedrmon vlanagent disable
set snmp extendedrmon enable
!
#ip
set interface sc0 3 172.25.66.122 255.255.255.192 172.25.66.127

set interface sc0 up
set interface sl0 0.0.0.0 0.0.0.0
set interface sl0 up
set arp agingtime 1200
set ip redirect enable
set ip unreachable enable
set ip fragmentation enable
set ip route 0.0.0.0 172.25.66.124 1
set ip alias default 0.0.0.0
!
#Command alias
!
#vmps
set vmps server retry 3
set vmps server reconfirminterval 60
set vmps tftpserver 0.0.0.0 vmps-config-database.1
set vmps state disable

!
#dns
set ip dns disable
!
#tacacs+
set tacacs attempts 3
set tacacs directedrequest disable
set tacacs timeout 5
!
#authentication
set authentication login tacacs disable console
set authentication login tacacs disable telnet
set authentication enable tacacs disable console
set authentication enable tacacs disable telnet
set authentication login local enable console
set authentication login local enable telnet
set authentication enable local enable console
set authentication enable local enable telnet
!
#bridge
set bridge ipx snaptoether 8023raw
set bridge ipx 8022toether 8023
set bridge ipx 8023rawtofdi snap
!
#vtp
set vtp domain vsc3000
set vtp mode transparent
set vtp v2 disable
set vtp pruneeligible 2-1000
clear vtp pruneeligible 1001-1005
set vlan 1 name default type ethernet mtu 1500 said 100001 state active
set vlan 2 name green type ethernet mtu 1500 said 100002 state active
set vlan 3 name blue type ethernet mtu 1500 said 100003 state active
set vlan 4 name red type ethernet mtu 1500 said 100004 state active
set vlan 1002 name fddi-default type fddi mtu 1500 said 101002 state active
set vlan 1004 name fddinet-default type fddinet mtu 1500 said 101004 state activ

```

```
e bridge 0x0 stp ieee
set vlan 1005 name trnet-default type trbrf mtu 1500 said 101005 state active br
idge 0x0 stp ibm
set vlan 1003 name token-ring-default type trcrf mtu 1500 said 101003 state acti
ve parent 0 ring 0x0 mode srb aremaxhop 7 stemaxhop 7
set interface sc0 3 172.25.66.122 255.255.255.192 172.25.66.127

!
#spantree
#uplinkfast groups
set spantree uplinkfast enable rate 15 all-protocols off
#backbonefast
set spantree backbonefast disable
set spantree enable all
#vlan 1
set spantree fwddelay 4 1
set spantree hello 1 1
set spantree maxage 20 1
set spantree priority 1000 1
#vlan 2
set spantree fwddelay 4 2
set spantree hello 1 2
set spantree maxage 20 2
set spantree priority 1000 2
#vlan 3
set spantree fwddelay 4 3
set spantree hello 1 3
set spantree maxage 20 3
set spantree priority 1000 3
#vlan 4
set spantree fwddelay 4 4
set spantree hello 1 4
set spantree maxage 20 4
set spantree priority 1000 4
#vlan 1003
set spantree fwddelay 15 1003
set spantree hello 2 1003
set spantree maxage 20 1003
set spantree priority 49152 1003
set spantree portstate 1003 block 0
set spantree portcost 1003 62
set spantree portpri 1003 4
set spantree portfast 1003 disable
#vlan 1005
set spantree fwddelay 15 1005
set spantree hello 2 1005
set spantree maxage 20 1005
set spantree priority 49152 1005
set spantree multicast-address 1005 ieee
!
#cgmp
set cgmp disable
set cgmp leave disable
!
#syslog
set logging console enable
set logging server disable
set logging level cdp 2 default
set logging level mcast 2 default
set logging level dtp 5 default
set logging level dvlan 2 default
set logging level earl 2 default
set logging level fddi 2 default
set logging level ip 2 default
```

```

set logging level pruning 2 default
set logging level snmp 2 default
set logging level spantree 2 default
set logging level sys 5 default
set logging level tac 2 default
set logging level tcp 2 default
set logging level telnet 2 default
set logging level tftp 2 default
set logging level vtp 2 default
set logging level vmps 2 default
set logging level kernel 2 default
set logging level filesys 2 default
set logging level drip 2 default
set logging level pagp 5 default
set logging level mgmt 5 default
set logging level mls 5 default
set logging level protfilt 2 default
set logging level security 2 default
set logging server facility LOCAL7
set logging server severity 4
set logging buffer 500
set logging timestamp disable
!
#ntp
set ntp broadcastclient disable
set ntp broadcastdelay 3000
set ntp client disable
clear timezone
set summertime disable
!
#set boot command
set boot config-register 0x2
set boot system flash bootflash:RTSYNC_cat5000-sup3_4-5-1.bin
set boot system flash bootflash:RTSYNC_cat5000-sup3.4-4-1.bin
set boot system flash bootflash:cat5000-sup3.4-3-1a.bin

!
#permit list
set ip permit disable
!
#drip
set tokenring reduction enable
set tokenring distrib-crf disable
!
#igmp
set igmp disable
!
#protocolfilter
set protocolfilter disable
!
#mls
set mls enable
set mls flow destination
set mls agingtime 256
set mls agingtime fast 0 0
set mls nde disable
!
#standby ports
set standbyports enable
!
#module 1 : 2-port 10/100BaseTX Supervisor
set module name 1
set vlan 1 1/1-2
set port channel 1/1-2 off

```



```
set port enable      1/1-2
set port level       1/1-2 normal
set port speed       1/1-2 100
set port duplex      1/1-2 full
set port trap        1/1-2 disable
set port name        1/1-2
set port security    1/1-2 disable
set port broadcast   1/1-2 100%
set port membership  1/1-2 static
set port protocol 1/1-2 ip on
set port protocol 1/1-2 ipx auto
set cdp enable       1/1-2
set cdp interval 1/1-2 60
set trunk 1/1 on isl 1-1005
set trunk 1/2 on isl 1-1005
set spantree portfast 1/1-2 disable
set spantree portcost 1/1-2 3019
set spantree portpri 1/1-2 32
set spantree portvlanpri 1/1 0
set spantree portvlanpri 1/2 0
set spantree portvlancost 1/1 cost 3018
set spantree portvlancost 1/2 cost 3018
!
#module 2 : 2-port 10/100BaseTX Supervisor
set module name      2
set vlan 1           2/1-2
set port channel 2/1-2 off
set port enable      2/1-2
set port level       2/1-2 normal
set port speed       2/1-2 100
set port duplex      2/1-2 full
set port trap        2/1-2 disable
set port name        2/1-2
set port security    2/1-2 disable
set port broadcast   2/1-2 100%
set port membership  2/1-2 static
set port protocol 2/1-2 ip on
set port protocol 2/1-2 ipx auto
set cdp enable       2/1-2
set cdp interval 2/1-2 60
set trunk 2/1 desirable isl 1-1005
set trunk 2/2 desirable isl 1-1005
set spantree portfast 2/1-2 disable
set spantree portcost 2/1-2 3019
set spantree portpri 2/1-2 32
set spantree portvlanpri 2/1 0
set spantree portvlanpri 2/2 0
set spantree portvlancost 2/1 cost 3018
set spantree portvlancost 2/2 cost 3018
!
#module 3 : 24-port 10BaseT Ethernet
set module name      3
set module enable    3
set vlan 1           3/19-20,3/22-24
set vlan 2           3/1-18
set vlan 3           3/21
set port enable      3/1-24
set port level       3/1-24 normal
set port duplex      3/1-24 half
set port trap        3/1-24 disable
set port name        3/1-24
set port security    3/1-24 disable
set port broadcast   3/1-24 0
set port membership  3/1-24 static
```

```

set port protocol 3/1-24 ip on
set port protocol 3/1-24 ipx auto
set cdp enable 3/1-24
set cdp interval 3/1-24 60
set spantree portfast 3/1-24 enable
set spantree portcost 3/1-24 3100
set spantree portpri 3/1-24 32
!
#module 4 : 12-port 10/100BaseTX Ethernet
set module name 4
set module enable 4
set vlan 2 4/1-2
set vlan 3 4/7-8
set vlan 4 4/3-6
set port channel 4/1-4 off
set port channel 4/5-8 off
set port channel 4/9-12 off
set port enable 4/1-12
set port level 4/1-12 normal
set port speed 4/1-12 auto
set port trap 4/1-12 disable
set port name 4/1-12
set port security 4/1-12 disable
set port broadcast 4/1-12 0
set port membership 4/1-12 static
set port protocol 4/1-12 ip on
set port protocol 4/1-12 ipx auto
set cdp enable 4/1-12
set cdp interval 4/1-12 60
set trunk 4/1 auto isl 1-1005
set trunk 4/2 auto isl 1-1005
set trunk 4/3 auto isl 1-1005
set trunk 4/4 auto isl 1-1005
set trunk 4/5 auto isl 1-1005
set trunk 4/6 auto isl 1-1005
set trunk 4/7 auto isl 1-1005
set trunk 4/8 auto isl 1-1005
set trunk 4/9 auto isl 1-1005
set trunk 4/10 auto isl 1-1005
set trunk 4/11 off isl 1-1005
set trunk 4/12 off isl 1-1005
set spantree portfast 4/1-12 enable
set spantree portcost 4/5-8, 4/11-12 3019
set spantree portcost 4/1-4, 4/9-10 3100
set spantree portpri 4/1-12 32
set spantree portvlanpri 4/1 0
set spantree portvlanpri 4/2 0
set spantree portvlanpri 4/3 0
set spantree portvlanpri 4/4 0
set spantree portvlanpri 4/5 0
set spantree portvlanpri 4/6 0
set spantree portvlanpri 4/7 0
set spantree portvlanpri 4/8 0
set spantree portvlanpri 4/9 0
set spantree portvlanpri 4/10 0
set spantree portvlanpri 4/11 0
set spantree portvlanpri 4/12 0
set spantree portvlancost 4/1 cost 3099
set spantree portvlancost 4/2 cost 3099
set spantree portvlancost 4/3 cost 3099
set spantree portvlancost 4/4 cost 3099
set spantree portvlancost 4/5 cost 3018
set spantree portvlancost 4/6 cost 3018
set spantree portvlancost 4/7 cost 3018

```

```

set spantree portvlancost 4/8 cost 3018
set spantree portvlancost 4/9 cost 3099
set spantree portvlancost 4/10 cost 3099
set spantree portvlancost 4/11 cost 3018
set spantree portvlancost 4/12 cost 3018
!
#module 5 empty
!
#module 6 empty
!
#module 7 empty
!
#module 8 empty
!
#module 9 empty
!
#module 10 empty
!
#module 11 empty
!
#module 12 : 1-port Route Switch
set module name 12
set port level 12/1 normal
set port trap 12/1 disable
set port name 12/1
set cdp enable 12/1
set cdp interval 12/1 60
set trunk 12/1 on isl 1-1005
set spantree portcost 12/1 3005
set spantree portpri 12/1 15
set spantree portvlanpri 12/1 160
set spantree portvlancost 12/1 cost 3004 4-8,11-15
!
#module 13 empty
!
#switch port analyzer
set span 2 3/23 both inpkts disable
!set span enable
!
#cam
set cam agingtime 1-4,1003,1005 300
end

```

Sample Configuration for Cisco Catalyst 5500 A RSM

To view the current configuration of the Cisco Catalyst 5500 A RSM, access the RSM interface, type the following command in privileged mode, and press **Enter**:

```
Catalyst_5513A_RSM#show run
```

Output similar to the following appears:

```
Building configuration...
```

```
Current configuration:
```

```

!
version 11.3
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!

```

```

hostname Catalyst_5513A_RSM
!
enable password cisco
!
no ip domain-lookup
!
!
!
interface Vlan2
 ip address 209.165.200.224 255.255.255.224
 no ip redirects
 standby 2 timers 1 3
 standby 2 priority 110
 standby 2 preempt
 standby 2 authentication VSC3000
 standby 2 ip 172.25.66.60
!
interface Vlan3
 ip address 209.165.200.224 255.255.255.224
 no ip redirects
 standby 3 timers 1 3
 standby 3 priority 110
 standby 3 preempt
 standby 3 authentication VSC3000
 standby 3 ip 209.165.200.224
!
interface Vlan4
 ip address 209.165.200.224 255.255.255.224
 no ip redirects
 standby 4 timers 1 3
 standby 4 priority 110
 standby 4 preempt
 standby 4 authentication VSC3000
 standby 4 ip 209.165.200.224
!
router eigrp 1
 network 209.165.200.224
!
ip classless
!
snmp-server community public RO
snmp-server community private RW
snmp-server chassis-id public
snmp-server enable traps snmp
snmp-server enable traps appn alert
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps rtr
!
line con 0
line aux 0
line vty 0 4
 password cisco
 login
!
end

```

Sample Configuration for Cisco Catalyst 5500 B

To view the current configuration of the Cisco Catalyst 5500 B, type the following command in privileged mode, and press **Enter**:

Catalyst_5513B (enable) **show config**

Output similar to the following appears:

```
begin
!
#version 4.5(1)
!
set password $1$70tT$J/rAZe2CANYvHW72ZMtI10
set enablepass $1$0o8Z$xbxAzs4LlepsklB6Ju7VY.
set prompt Catalyst_5513B
set length 24 default
set logout 20
set banner motd ^C^C
!
#system
set system baud 9600
set system modem disable
set system name Catalyst_5513B
set system location Lab1
set system contact John Smith 913 555-7998
!
#snmp
set snmp community read-only public
set snmp community read-write private
set snmp community read-write-all public
set snmp rmon disable
set snmp trap disable module
set snmp trap disable chassis
set snmp trap disable bridge
set snmp trap disable repeater
set snmp trap disable vtp
set snmp trap disable auth
set snmp trap disable ippermit
set snmp trap disable vmps
set snmp trap disable entity
set snmp trap disable config
set snmp trap disable stpx
set snmp trap disable syslog
set snmp extendedrmon vlanmode disable
set snmp extendedrmon vlanagent disable
set snmp extendedrmon enable
!
#ip
set interface sc0 3 209.165.200.224 255.255.255.224

set interface sc0 up
set interface sl0 0.0.0.0 0.0.0.0
set interface sl0 up
set arp agingtime 1200
set ip redirect enable
set ip unreachable enable
set ip fragmentation enable
set ip route 0.0.0.0 209.165.200.224
set ip alias default 0.0.0.0
!
#Command alias
!
#vmps
set vmps server retry 3
set vmps server reconfirminterval 60
set vmps tftpserver 0.0.0.0 vmps-config-database.1
set vmps state disable
```

```

!
#dns
set ip dns disable
!
#tacacs+
set tacacs attempts 3
set tacacs directedrequest disable
set tacacs timeout 5
!
#authentication
set authentication login tacacs disable console
set authentication login tacacs disable telnet
set authentication enable tacacs disable console
set authentication enable tacacs disable telnet
set authentication login local enable console
set authentication login local enable telnet
set authentication enable local enable console
set authentication enable local enable telnet
!
#bridge
set bridge ipx snaptoether 8023raw
set bridge ipx 8022toether 8023
set bridge ipx 8023rawtofdi snap
!
#vtp
set vtp domain vsc3000
set vtp mode transparent
set vtp v2 disable
set vtp pruneeligible 2-1000
clear vtp pruneeligible 1001-1005
set vlan 1 name default type ethernet mtu 1500 said 100001 state active
set vlan 2 name green type ethernet mtu 1500 said 100002 state active
set vlan 3 name blue type ethernet mtu 1500 said 100003 state active
set vlan 4 name red type ethernet mtu 1500 said 100004 state active
set vlan 1002 name fddi-default type fddi mtu 1500 said 101002 state active
set vlan 1004 name fddinet-default type fddinet mtu 1500 said 101004 state active bridge
0x0 stp ieee
set vlan 1005 name trnet-default type trbrf mtu 1500 said 101005 state active bridge 0x0
stp ibm
set vlan 1003 name token-ring-default type trcrf mtu 1500 said 101003 state active parent
0 ring 0x0 mode srb aremaxhop 7 stemaxhop 7
set interface sc0 3 209.165.200.224 255.255.255.224 209.165.200.224

!
#spantree
#uplinkfast groups
set spantree uplinkfast disable
#backbonefast
set spantree backbonefast disable
set spantree enable all
#vlan 1
set spantree fwddelay 4 1
set spantree hello 2 1
set spantree maxage 20 1
set spantree priority 2000 1
#vlan 2
set spantree fwddelay 4 2
set spantree hello 2 2
set spantree maxage 20 2
set spantree priority 2000 2
#vlan 3
set spantree fwddelay 4 3
set spantree hello 2 3

```

```
set spantree maxage 20 3
set spantree priority 2000 3
#vlan 4
set spantree fwddelay 4 4
set spantree hello 2 4
set spantree maxage 20 4
set spantree priority 2000 4
#vlan 1003
set spantree fwddelay 15 1003
set spantree hello 2 1003
set spantree maxage 20 1003
set spantree priority 32768 1003
set spantree portstate 1003 block 0
set spantree portcost 1003 62
set spantree portpri 1003 4
set spantree portfast 1003 disable
#vlan 1005
set spantree fwddelay 15 1005
set spantree hello 2 1005
set spantree maxage 20 1005
set spantree priority 32768 1005
set spantree multicast-address 1005 ieee
!
#cgmp
set cgmp disable
set cgmp leave disable
!
#syslog
set logging console enable
set logging server disable
set logging level cdp 2 default
set logging level mcast 2 default
set logging level dtp 5 default
set logging level dvlan 2 default
set logging level earl 2 default
set logging level fddi 2 default
set logging level ip 2 default
set logging level pruning 2 default
set logging level snmp 2 default
set logging level spantree 2 default
set logging level sys 5 default
set logging level tac 2 default
set logging level tcp 2 default
set logging level telnet 2 default
set logging level tftp 2 default
set logging level vtp 2 default
set logging level vmps 2 default
set logging level kernel 2 default
set logging level filesys 2 default
set logging level drip 2 default
set logging level pagp 5 default
set logging level mgmt 5 default
set logging level mls 5 default
set logging level protfilt 2 default
set logging level security 2 default
set logging server facility LOCAL7
set logging server severity 4
set logging buffer 500
set logging timestamp disable
!
#ntp
set ntp broadcastclient disable
set ntp broadcastdelay 3000
set ntp client disable
```

```

clear timezone
set summertime disable
!
#set boot command
set boot config-register 0x2
set boot system flash bootflash:cat5000-sup3.4-5-1.bin
!
#permit list
set ip permit disable
!
#drip
set tokenring reduction enable
set tokenring distrib-crf disable
!
#igmp
set igmp disable
!
#protocolfilter
set protocolfilter disable
!
#mls
set mls enable
set mls flow destination
set mls agingtime 256
set mls agingtime fast 0 0
set mls nde disable
!
#standby ports
set standbyports enable
!
#module 1 : 2-port 10/100BaseTX Supervisor
set module name 1
set vlan 1 1/1-2
set port channel 1/1-2 off
set port enable 1/1-2
set port level 1/1-2 normal
set port speed 1/1-2 100
set port duplex 1/1-2 full
set port trap 1/1-2 disable
set port name 1/1-2
set port security 1/1-2 disable
set port broadcast 1/1-2 100%
set port membership 1/1-2 static
set port protocol 1/1-2 ip on
set port protocol 1/1-2 ipx auto
set cdp enable 1/1-2
set cdp interval 1/1-2 60
set trunk 1/1 on isl 1-1005
set trunk 1/2 on isl 1-1005
set spantree portfast 1/1-2 disable
set spantree portcost 1/1-2 3019
set spantree portpri 1/1-2 32
set spantree portvlanpri 1/1 0
set spantree portvlanpri 1/2 0
set spantree portvlancost 1/1 cost 3018
set spantree portvlancost 1/2 cost 3018
!
#module 2 : 2-port 10/100BaseTX Supervisor
set module name 2
set vlan 1 2/1-2
set port channel 2/1-2 off
set port enable 2/1-2
set port level 2/1-2 normal
set port speed 2/1-2 100

```



```
set port duplex      2/1-2  full
set port trap        2/1-2  disable
set port name        2/1-2
set port security    2/1-2  disable
set port broadcast   2/1-2  100%
set port membership  2/1-2  static
set port protocol 2/1-2 ip on
set port protocol 2/1-2 ipx auto
set cdp enable       2/1-2
set cdp interval 2/1-2 60
set trunk 2/1 desirable isl 1-1005
set trunk 2/2 desirable isl 1-1005
set spantree portfast 2/1-2 disable
set spantree portcost 2/1-2 3019
set spantree portpri 2/1-2 32
set spantree portvlanpri 2/1 0
set spantree portvlanpri 2/2 0
set spantree portvlancost 2/1 cost 3018
set spantree portvlancost 2/2 cost 3018
!
#module 3 : 24-port 10BaseT Ethernet
set module name 3
set module enable 3
set vlan 1 3/20-24
set vlan 2 3/17
set vlan 3 3/1-16,3/19
set port enable 3/1-24
set port level 3/1-24 normal
set port duplex 3/1-24 half
set port trap 3/1-24 disable
set port name 3/1-24
set port security 3/1-24 disable
set port broadcast 3/1-24 0
set port membership 3/1-24 static
set port protocol 3/1-24 ip on
set port protocol 3/1-24 ipx auto
set cdp enable 3/1-24
set cdp interval 3/1-24 60
set spantree portfast 3/1-24 enable
set spantree portcost 3/1-24 3100
set spantree portpri 3/1-24 32
!
#module 4 : 12-port 10/100BaseTX Ethernet
set module name 4
set module enable 4
set vlan 2 4/1-2
set vlan 3 4/7-8
set vlan 4 4/3-6
set port channel 4/1-4 off
set port channel 4/5-8 off
set port channel 4/9-12 off
set port enable 4/1-12
set port level 4/1-12 normal
set port speed 4/1-10 auto
set port speed 4/11-12 100
set port duplex 4/11-12 full
set port trap 4/1-12 disable
set port name 4/1-12
set port security 4/1-12 disable
set port broadcast 4/1-12 0
set port membership 4/1-12 static
set port protocol 4/1-12 ip on
set port protocol 4/1-12 ipx auto
set cdp enable 4/1-12
```

```

set cdp interval 4/1-12 60
set trunk 4/1 auto isl 1-1005
set trunk 4/2 auto isl 1-1005
set trunk 4/3 auto isl 1-1005
set trunk 4/4 auto isl 1-1005
set trunk 4/5 auto isl 1-1005
set trunk 4/6 auto isl 1-1005
set trunk 4/7 auto isl 1-1005
set trunk 4/8 auto isl 1-1005
set trunk 4/9 auto isl 1-1005
set trunk 4/10 auto isl 1-1005
set trunk 4/11 desirable isl 1-1005
set trunk 4/12 desirable isl 1-1005
set spantree portfast 4/1-12 enable
set spantree portcost 4/1,4/6-7,4/11-12 3019
set spantree portcost 4/2-5,4/8-10 3100
set spantree portpri 4/1-12 32
set spantree portvlanpri 4/1 0
set spantree portvlanpri 4/2 0
set spantree portvlanpri 4/3 0
set spantree portvlanpri 4/4 0
set spantree portvlanpri 4/5 0
set spantree portvlanpri 4/6 0
set spantree portvlanpri 4/7 0
set spantree portvlanpri 4/8 0
set spantree portvlanpri 4/9 0
set spantree portvlanpri 4/10 0
set spantree portvlanpri 4/11 0
set spantree portvlanpri 4/12 0
set spantree portvlancost 4/1 cost 3018
set spantree portvlancost 4/2 cost 3099
set spantree portvlancost 4/3 cost 3099
set spantree portvlancost 4/4 cost 3099
set spantree portvlancost 4/5 cost 3099
set spantree portvlancost 4/6 cost 3018
set spantree portvlancost 4/7 cost 3018
set spantree portvlancost 4/8 cost 3099
set spantree portvlancost 4/9 cost 3099
set spantree portvlancost 4/10 cost 3099
set spantree portvlancost 4/11 cost 3018
set spantree portvlancost 4/12 cost 3018
!
#module 5 empty
!
#module 6 empty
!
#module 7 empty
!
#module 8 empty
!
#module 9 empty
!
#module 10 empty
!
#module 11 empty
!
#module 12 : 1-port Route Switch
set module name 12
set port level 12/1 normal
set port trap 12/1 disable
set port name 12/1
set cdp enable 12/1
set cdp interval 12/1 60
set trunk 12/1 on isl 1-1005

```

```
set spantree portcost 12/1 3005
set spantree portpri 12/1 15
set spantree portvlanpri 12/1 160
set spantree portvlancost 12/1 cost 3004 4-8,11-15
!
#module 13 empty
!
#switch port analyzer
!set span 1 1/1 both inpkts disable
set span disable
!
#cam
set cam agingtime 1-4,1003,1005 300
end
```

Sample Configuration for Cisco Catalyst 5500 B RSM

To view the current configuration of the Cisco Catalyst 5500 B RSM, access the RSM interface, type the following command in privileged mode, and press **Enter**:

```
Catalyst_5513B_RSM#show run
```

Output similar to the following appears:

Building configuration...

Current configuration:

```
!
version 11.3
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Catalyst_5513B_RSM
!
enable password cisco
!
no ip domain-lookup
!
!
!
interface Vlan2
 ip address 209.165.200.224 255.255.255.224
 no ip redirects
 standby 2 timers 1 3
 standby 2 preempt
 standby 2 authentication VSC3000
 standby 2 ip 172.25.66.60
!
interface Vlan3
 ip address 209.165.200.224 255.255.255.224
 no ip redirects
 standby 3 timers 1 3
 standby 3 preempt
 standby 3 authentication vsc3000
 standby 3 ip 209.165.200.224
!
interface Vlan4
 ip address 209.165.200.224 255.255.255.224
 no ip redirects
 standby 4 timers 1 3
```

```
standby 4 preempt
standby 4 authentication VSC3000
standby 4 ip 209.165.200.224
!
router eigrp 1
 network 209.165.200.224
!
ip classless
!
snmp-server community public RO
snmp-server community private RW
snmp-server chassis-id public
snmp-server enable traps snmp
snmp-server enable traps appn alert
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps rtr
!
line con 0
line aux 0
line vty 0 4
 password cisco
 login
!
end
```